CLAIMS

What is claimed is:

1. An uplink transmission method, applied to user equipment and comprising:

receiving a scheduling instruction transmitted by a network-side device, wherein the scheduling instruction comprises a set of interlace indices of resource blocks and a scheduled bandwidth, and an interlace of resource blocks in the scheduled bandwidth indicated by the set of interlace indices of resource blocks comprises a guard band physical resource block PRB;

performing clear channel detection for the scheduled bandwidth;

determining a PRB for data transmission in the interlace of resource blocks based on a detection result of the clear channel detection; and

transmitting data by using the PRB for data transmission.

2. The method according to claim 1, wherein a plurality of interlaces of resource blocks are indexed in terms of all PRBs on an entire carrier bandwidth; and

the determining a PRB for data transmission in the interlace of resource blocks based on a detection result of the clear channel detection comprises:

selecting, from the interlace of resource blocks indicated by the set of interlace indices of resource blocks in the entire carrier bandwidth, candidate PRBs in the scheduled bandwidth; and

determining the PRB for data transmission from the candidate PRBs based on the detection result of the clear channel detection.

3. The method according to claim 1, wherein the determining a PRB for data transmission in the interlace of resource blocks based on a detection result of the clear channel detection comprises:

if the detection result of the clear channel detection indicates that successfully detected listen before talk LBT channels comprise adjacent LBT channels, determining that the PRB for data transmission in the interlace of resource blocks comprises a first PRB, wherein the first PRB is a guard band PRB between the adjacent LBT channels.

4. The method according to claim 1, wherein before the transmitting data by using the PRB for data transmission, the method further comprises:

preparing data according to the scheduling instruction, wherein the prepared data comprises the transmitted data.

5. The method according to claim 4, wherein the preparing data according to the scheduling instruction comprises:

if the scheduled bandwidth is less than or equal to an LBT bandwidth, disabling the use of the guard band PRB, calculating a transport block size, and preparing data corresponding to the transport block size.

6. The method according to claim 4, wherein the scheduling instruction further comprises indication information, and the indication information is used to indicate whether the guard band PRB is allowed to be used.

7. The method according to claim 6, wherein

the indication information is used to indicate at least one of the following:

the guard band PRB is disabled to be used on a first time domain resource; and

the guard band PRB is allowed to be used on a second time domain resource;

or

the indication information is used to indicate that the guard band PRB is completely disabled to be used.

8. The method according to claim 6, wherein the indication information is used to indicate that the guard band PRB is disabled to be used on a first time domain resource and that the guard band PRB is allowed to be used on a second time domain resource; and

the first time domain resource and the second time domain resource are consecutive time domain resources in time domain.

9. The method according to claim 7, wherein the scheduled bandwidth is greater than or equal to an LBT bandwidth; and

the preparing data according to the scheduling instruction comprises:

if the indication information is used to indicate that the guard band PRB is disabled to be used on the first time domain resource, or the indication information is used to indicate that the guard band PRB is completely disabled to be used, calculating a plurality of candidate transport block sizes based on a quantity of possibly successfully detected LBT bandwidths in the

scheduled bandwidth, and preparing a plurality of versions of data respectively corresponding to the plurality of candidate transport block sizes, wherein

the transmitted data is one of the plurality of versions of data determined based on the detection result.

10. The method according to claim 7, wherein the scheduled bandwidth is greater than or equal to an LBT bandwidth; and

the preparing data according to the scheduling instruction comprises:

if the indication information is used to indicate that the guard band PRB is allowed to be used on the second time domain resource, calculating, on the second time domain resource or a time domain resource after the second time domain resource, a plurality of candidate transport block sizes based on a predicted PRB in the interlace of resource blocks, and preparing a plurality of versions of data corresponding to the plurality of candidate transport block sizes, wherein the predicted PRB is determined based on positions and/or a quantity of possibly detected LBT bandwidths in the scheduled bandwidth; and

the transmitted data is one of the plurality of versions of data determined based on the detection result; or

wherein the scheduled bandwidth is greater than or equal to an LBT bandwidth; and

the preparing data according to the scheduling instruction comprises:

calculating, on the first time domain resource, a plurality of candidate transport block sizes based on a quantity of possibly successfully detected LBT bandwidths in the scheduled bandwidth, and preparing a plurality of versions of data corresponding to the plurality of candidate transport block sizes; and

preparing data on the second time domain resource or a time domain resource after the second time domain resource based on a successfully detected LBT bandwidth in the scheduled bandwidth on the first time domain resource.

11. The method according to claim 1, wherein the determining a PRB for data transmission in the interlace of resource blocks based on a detection result of the clear channel detection comprises:

determining a punctured PRB in the interlace of resource blocks based on the detection result of the clear channel detection, wherein the PRB for data transmission in the interlace of resource blocks does not comprise the punctured PRB.

12. An uplink transmission method, applied to a network-side device and comprising:

transmitting a scheduling instruction, wherein the scheduling instruction comprises a set of interlace indices of resource blocks and a scheduled bandwidth, and an interlace of resource blocks in the scheduled bandwidth indicated by the set of interlace indices of resource blocks comprises a guard band physical resource block PRB;

determining a PRB for data transmission in the interlace of resource blocks; and

decoding the PRB for data transmission.

13. The method according to claim 12, wherein a plurality of interlaces of resource blocks are indexed in terms of all PRBs on an entire carrier bandwidth; and

the determining a PRB for data transmission in the interlace of resource blocks comprises:

selecting, from an interlace of resource blocks indicated by the set of interlace indices of resource blocks in the entire carrier bandwidth, candidate PRBs in the scheduled bandwidth; and

determining the PRB for data transmission from the candidate PRBs; or

wherein the determining a PRB for data transmission in the interlace of resource blocks comprises:

if a transmission bandwidth for data transmission comprises adjacent listen before talk LBT channels, determining that the PRB for data transmission in the interlace of resource blocks comprises a first PRB, wherein the first PRB is a guard band PRB between the adjacent LBT channels.

14. The method according to claim 12, wherein the scheduling instruction further comprises indication information, and the indication information is used to indicate whether the guard band PRB is allowed to be used.

15. The method according to claim 14, wherein

the indication information is used to indicate at least one of the following:

the guard band PRB is disabled to be used on a first time domain resource; and

the guard band PRB is allowed to be used on a second time domain resource;

or

the indication information is used to indicate that the guard band PRB is completely disabled to be used; or

wherein the indication information is used to indicate that the guard band PRB is disabled to be used on a first time domain resource and that the guard band PRB is allowed to be used on a second time domain resource; and

the first time domain resource and the second time domain resource are consecutive time domain resources in time domain.

16. User equipment, comprising:

a receiving module, configured to receive a scheduling instruction transmitted by a network-side device, wherein the scheduling instruction comprises a set of interlace indices of resource blocks and a scheduled bandwidth, and an interlace of resource blocks in the scheduled bandwidth indicated by the set of interlace indices of resource blocks comprises a guard band physical resource block PRB;

a detection module, configured to perform clear channel detection for the scheduled bandwidth;

a determining module, configured to determine a PRB for data transmission in the interlace of resource blocks based on a detection result of the clear channel detection; and

a transmission module, configured to transmit data by using the PRB for data transmission.

17. A network-side device, comprising:

a transmitting module, configured to transmit a scheduling instruction, wherein the scheduling instruction comprises a set of interlace indices of resource blocks and a scheduled bandwidth, and an interlace of resource blocks in the scheduled bandwidth indicated by the set of interlace indices of resource blocks comprises a guard band physical resource block PRB;

a determining module, configured to determine a PRB for data transmission in the interlace of resource blocks; and

a decoding module, configured to decode the PRB for data transmission.

18. User equipment, 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 uplink transmission method according to any one of claims 1 to 11 are implemented.

19. A network-side device, comprising a processor, a memory, 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 uplink transmission method according to any one of claims 12 to 15 are implemented.

20. 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 uplink transmission method according to any one of claims 1 to 11 are implemented; or when the computer program is executed by a processor, the steps of the uplink transmission method according to any one of claims 12 to 15 are implemented.