

CLAIMS

- 5 1. A method for Discontinuous Reception (DRX), comprising:
receiving, by a terminal device, a DRX indication signal sent by a network
device, wherein the DRX indication signal comprises a first sequence, the first
sequence is to instruct the terminal device to wake up or sleep during an on duration
in a DRX cycle after the first sequence, the terminal device belongs to a device group
10 in M device groups, the first sequence corresponds to the device group to which the
terminal device belongs, each device group in the M device groups corresponds to a
respective first sequence and M is a positive integer; and
the terminal device waking up or sleeping during the on duration in the DRX
cycle after the first sequence according to the first sequence.
- 15 2. The method of claim 1, wherein the device group to which the terminal device
belongs is determined according to a User Equipment Identity (UE-ID) of the terminal
device or an access level of the terminal device.
- 20 3. The method of claim 1 or 2, wherein M first sequences corresponding to the M
device groups are: M orthogonal sequences, or M Zadoff-Chu (ZC) sequences with
different offset values.
4. The method of claim 1 or 2, wherein the first sequence corresponding to the
25 terminal device is determined according to the device group to which the terminal
device belongs and a Physical Cell Identifier (PCI) of a cell where the terminal device
is located.
5. The method of claim 4, wherein each of a plurality of cells corresponds to a
30 respective one of a plurality of initial sequences, the respective initial sequence
corresponding to each of the plurality of cells is generated based on a PCI of the cell,
each of the M device groups corresponds to a respective one of M second scrambling
codes, and initial sequences corresponding to the terminal devices belonging to
different device groups in each cell are scrambled with respective second scrambling

codes.

6. A network device, comprising:

5 a determination unit, configured to determine a first sequence corresponding to a terminal device according to information about a device group to which the terminal device belongs, wherein the first sequence is to instruct the terminal device to wake up or sleep during an on duration in a Discontinuous Reception (DRX) cycle after the first sequence, the terminal device belongs to a device group in M device groups, the first sequence corresponds to the device group to which the terminal
10 device belongs, each device group in the M device groups corresponds to a respective first sequence and M is a positive integer; and

a transceiver unit, configured to send a DRX indication signal to the terminal device, wherein the DRX indication signal comprises the first sequence determined by the determination unit, to enable the terminal device to wake up or sleep during the on
15 duration in the DRX cycle after the first sequence according to the first sequence.

7. The network device of claim 6, wherein the determination unit is further configured to:

20 determine the device group to which the terminal device belongs according to a User Equipment Identity (UE-ID) of the terminal device or an access level of the terminal device.

8. The network device of claim 6 or 7, wherein M first sequences corresponding to the M device groups are: M orthogonal sequences, or M Zadoff-Chu (ZC) sequences
25 with different offset values.

9. The network device of claim 6 or 7, wherein the determination unit is specifically configured to:

30 determine the first sequence corresponding to the terminal device according to the device group to which the terminal device belongs and a Physical Cell Identifier (PCI) of a cell where the terminal device is located.

10. The network device of claim 9, wherein each of a plurality of cells corresponds to

a respective one of a plurality of initial sequences, the respective initial sequence corresponding to each of the plurality of cells is generated based on a PCI of the cell, each of the M device groups corresponds to a respective one of M second scrambling codes, and initial sequences corresponding to the terminal devices belonging to different device groups in each cell are scrambled with respective second scrambling codes.

11. A terminal device for Discontinuous Reception (DRX), comprising:
a transceiver unit, configured to receive a DRX indication signal sent by a network device, wherein the DRX indication signal comprises a first sequence, the first sequence is to instruct the terminal device to wake up or sleep during an on duration in a DRX cycle after the first sequence, the terminal device belongs to a device group in M device groups, the first sequence corresponds to the device group to which the terminal device belongs, each device group in the M device groups corresponds to a respective first sequence and M is a positive integer; and
a processing unit, configured to wake up or sleep during the on duration in the DRX cycle after the first sequence according to the first sequence received by the transceiver unit.

12. The terminal device of claim 11, wherein the device group to which the terminal device belongs is determined according to a User Equipment Identity (UE-ID) of the terminal device or an access level of the terminal device.

13. The terminal device of claim 11 or 12, wherein M first sequences corresponding to the M device groups are: M orthogonal sequences, or M Zadoff-Chu (ZC) sequences with different offset values.

14. The terminal device of claim 11 or 12, wherein the first sequence corresponding to the terminal device is determined according to the device group to which the terminal device belongs and a Tracking Area (TA) where the terminal device is located.

15. The terminal device of claim 14, wherein the terminal device belongs to a TA

group in N TA groups, and $M \times N$ first sequences corresponding to $M \times N$ terminal devices belonging to different device groups and belonging to different TA groups in all terminal devices of the M device groups are: $M \times N$ orthogonal sequences, or $M \times N$ Zadoff-Chu (ZC) sequences with different offset values; or

5 M first sequences corresponding to the M device groups are M ZC sequences with different offset values, and the ZC sequences corresponding to the terminal devices belonging to different TA groups are scrambled with respective first scrambling codes, each of the first scrambling codes is generated based on a respective one of the TA groups and N is a positive integer.

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16. The terminal device of claim 15, wherein a serial number of the TA group to which the terminal device belongs is mod (TA code, N), and TA code is a TA code of the TA where the terminal device is located.

15 17. The terminal device of claim 11 or 12, wherein the first sequence corresponding to the terminal device is determined according to the device group to which the terminal device belongs and a Physical Cell Identifier (PCI) of a cell where the terminal device is located.

20 18. The terminal device of claim 17, wherein each of a plurality of cells corresponds to a respective one of a plurality of initial sequences, the respective initial sequence corresponding to each of the plurality of cells is generated based on a PCI of the cell, each of the M device groups corresponds to a respective one of M second scrambling codes, and initial sequences corresponding to the terminal devices belonging to
25 different device groups in each cell are scrambled with respective second scrambling codes.

19. The terminal device of any one of claims 11-18, wherein the transceiver unit is specifically configured to:

30 receive the first sequence simultaneously sent by the network device and other network devices in a Tracking Area (TA) where the terminal device is located through a Single Frequency Network (SFN).

20. The terminal device of any one of claims 11-19, wherein the DRX indication signal further comprises a second sequence, the second sequence is generated based on a Physical Cell Identifier (PCI) of a cell where the terminal device is located, and
in the case that the first sequence instructs the terminal device to wake up
5 during the on duration in the DRX cycle after the first sequence, the processing unit is further configured to:
perform time-frequency synchronization according to the second sequence.