

CLAIMS

5 1. A measurement method, comprising:

receiving, by a terminal, a switching message of a narrow-bandwidth receiving mode from a base station;

switching, by the terminal, to a specified narrow bandwidth for information reception; and

10 sequentially switching, by the terminal, to at least two different measurement narrow bandwidths according to scheduling of the base station, to measure downlink reference signals, when channel state information (CSI) of a downlink channel needs to be measured,

wherein each of the specified narrow bandwidth and the at least two different measurement narrow bandwidths is smaller than a system bandwidth and the at least two different measurement narrow bandwidths comprise the first measurement narrow bandwidth and the second measurement narrow bandwidth, and sequentially switching to the at least two different measurement narrow bandwidths according to scheduling of the base station, to measure the downlink reference signals, when the CSI of the downlink channel needs to be measured comprises:

20 receiving first DCI sent by the base station in a physical downlink control channel (PDCCH) on the specified narrow bandwidth, wherein the first DCI comprises bandwidth information of the first measurement narrow bandwidth, and starting time and ending time for measurement on the first measurement narrow bandwidth, and

switching to the first measurement narrow bandwidth to measure the downlink reference signals; and

after completion of measurement on the first measurement narrow bandwidth and switching back to the specified narrow bandwidth,

30 receiving second DCI sent by the base station in the PDCCH on the specified narrow bandwidth, wherein the second DCI comprises bandwidth information of the second measurement narrow bandwidth, and starting time and ending time for measurement on the second measurement narrow bandwidth, and

switching to the second measurement narrow bandwidth to measure the downlink reference signals.

2. The measurement method of claim 1, further comprising:

5 receiving downlink control information (DCI) in the PDCCH on the specified narrow bandwidth, wherein

the DCI is in a terminal-specific search space corresponding to the terminal and at a control channel element aggregation level corresponding to the terminal.

10 3. The measurement method of claim 1, wherein sequentially switching to the at least two different measurement narrow bandwidths according to scheduling of the base station, to measure the downlink reference signals, when the CSI of the downlink channel needs to be measured further comprises:

15 receiving measurement parameters configured by the base station for the terminal, to measure the downlink reference signals, wherein the measurement parameters comprise a period in which the terminal measures the downlink reference signals, first time information used for the terminal to measure the downlink reference signals on the first measurement narrow bandwidth in the period and second time information used for the terminal to measure the downlink reference signals on the
20 second measurement narrow bandwidth in the period, the measurement parameters are sent to the terminal, and the period comprises a duration in which the terminal enters the narrow-bandwidth receiving mode, switches to the first measurement narrow bandwidth to measure the downlink reference signals, switches to the second measurement narrow bandwidth to measure the downlink reference signals, and enters
25 the narrow-bandwidth receiving mode again; and

sequentially switching to the first measurement narrow bandwidth and the second measurement narrow bandwidth according to the measurement parameters, to measure the downlink reference signals.

30 4. The measurement method of claim 3, before sequentially switching to the first measurement narrow bandwidth and the second measurement narrow bandwidth according to the measurement parameters, to measure the downlink reference signals, further comprising:

receiving a triggering signal sent by the base station in the PDCCH on the specified narrow bandwidth, wherein the triggering signal is to trigger the terminal to switch to the system bandwidth according to the measurement parameters, to measure the downlink reference signals.

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5. The measurement method of claim 3, wherein the measurement parameters configured by the base station for the terminal comprises at least two different configurations, and when the measurement parameters are received, a configuration patterns of the measurement parameters are determined through an indication of the PDCCH on the specified narrow bandwidth; and

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when the base station needs to modify the present measurement parameters, information sent by the base station through the PDCCH on the specified narrow bandwidth and instructing the terminal to perform measurement using another set of configured measurement parameters is received.

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6. The measurement method of claim 1, wherein measurement narrow bandwidth indexes, each configured for bandwidth information of a respective one of the at least two measurement narrow bandwidths by the base station, are received, wherein the measurement narrow bandwidth index is to indicate the bandwidth information of the measurement narrow bandwidth, to which the terminal is to switch.

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7. The measurement method of claim 1, further comprising:

reporting the CSI of the downlink channel to the base station, wherein the CSI of the downlink channel is calculated by the terminal by using a preset algorithm based on measurement results of the at least two different measurement narrow bandwidths, or reporting the measurement results of the at least two measurement narrow bandwidths to the base station which calculates the CSI of the downlink channel by using the preset algorithm;

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receiving a measurement stopping message sent by the base station; and

in response to the measurement stopping message, stopping measurement of the downlink reference signals.

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8. The measurement method of claim 7, wherein the preset algorithm comprises

weighted summation, averaging, or averaging without extremums.

9. A terminal, comprising:

5 a processor, a memory, a transmitter, a receiver and a bus, the processor, the memory, the transmitter and the receiver being connected through the bus, wherein the transmitter is arranged to transmit a signal, the receiver is arranged to receive the signal, the transmitter and the receiver are independently arranged respectively or integrated, the memory is arranged to store a set of program codes, and the processor is arranged to call the program codes stored in the memory to execute the following
10 operations:

receiving, through the receiver, a switching message of a narrow-bandwidth receiving mode from a base station;

switching to a specified narrow bandwidth for information reception; and

when channel state information (CSI) of a downlink channel needs to be
15 measured, sequentially switching, according to scheduling of the base station, to at least two different measurement narrow bandwidths to measure downlink reference signals,

wherein each of the specified narrow bandwidth and the at least two different measurement narrow bandwidths is smaller than a system bandwidth;

20 when the at least two different measurement narrow bandwidths comprise the first measurement narrow bandwidth and the second measurement narrow bandwidth, the processor is arranged to:

receive, through the receiver, first DCI sent by the base station in a physical downlink control channel (PDCCH) on the specified narrow bandwidth, the first DCI
25 comprising bandwidth information of the first measurement narrow bandwidth, and starting time and ending time for measurement on the first measurement narrow bandwidth, and switch the terminal to the first measurement narrow bandwidth to measure the downlink reference signals; and

after completion of measurement on the first measurement narrow bandwidth
30 and switching back to the specified narrow bandwidth,

receive, through the receiver, second DCI sent by the base station in the PDCCH on the specified narrow bandwidth, the second DCI comprising bandwidth information of the second measurement narrow bandwidth, and

starting time and ending time for measurement on the second measurement narrow bandwidth, and

switch to the second measurement narrow bandwidth to measure the downlink reference signals.

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10. The terminal of claim 9, wherein the processor is further arranged to receive, through the receiver, downlink control information (DCI) for the terminal in the PDCCH on the specified narrow bandwidth; and

the DCI is in a terminal-specific search space corresponding to the terminal and at a control channel element aggregation level corresponding to the terminal.

11. The terminal of claim 9, wherein, the processor is further arranged to receive, through the receiver, measurement parameters configured by the base station for the terminal to measure the downlink reference signals, wherein the measurement parameters comprise a period in which the terminal measures the downlink reference signals, first time information used for the terminal to measure the downlink reference signals on the first measurement narrow bandwidth in the period and second time information used for the terminal to measure the downlink reference signals on the second measurement narrow bandwidth in the period, the measurement parameters are sent to the terminal; and the period comprises a duration in which the terminal enters the narrow-bandwidth receiving mode, switches to the first measurement narrow bandwidth to measure the downlink reference signals, switches to the second measurement narrow bandwidth to measure the downlink reference signals, and enters the narrow-bandwidth receiving mode again; and

sequentially switch to the first measurement narrow bandwidth and the second measurement narrow bandwidth according to the measurement parameters, to measure the downlink reference signals.

12. The terminal of claim 11, wherein the processor is further arranged to, before switching to the first measurement narrow bandwidth and the second measurement narrow bandwidth to measure the downlink reference signals is sequentially executed according to the measurement parameters, receive, through the receiver, a triggering signal sent by the base station in the PDCCH on the specified narrow bandwidth,

wherein the triggering signal is to trigger the terminal to switch, according to the measurement parameters, to the system bandwidth to measure the downlink reference signals.

5 13. The terminal of claim 11, wherein the measurement parameters configured by the base station for the terminal comprise at least two different configurations, and when the measurement parameters are received, the processor is further arranged to determine configuration patterns of the measurement parameters through an indication of the PDCCH on the specified narrow bandwidth; and

10 when the base station needs to modify the present measurement parameters, receive, through the receiver, information sent by the base station through the PDCCH on the specified narrow bandwidth and instruct the terminal to use another set of configured measurement parameters for measurement.

15 14. The terminal of claim 9, wherein the processor is further arranged to receive measurement narrow bandwidth indexes, each configured for bandwidth information of a respective one of the at least two measurement narrow bandwidths by the base station, wherein the measurement narrow bandwidth index is to indicate the bandwidth information of the measurement narrow bandwidth, to which the terminal
20 is to switch.

15. The terminal of claim 9, wherein the processor is further arranged to report, through the transmitter, the CSI of the downlink channel, which is calculated by the terminal by using a preset algorithm based on measurement results of the at least two
25 different measurement narrow bandwidths, to the base station, or report the measurement results of the at least two measurement narrow bandwidths to the base station which calculates the CSI of the downlink channel by using the preset algorithm; and

 receive, through the receiver, a measurement stopping message sent by the
30 base station; and

 in response to the measurement stopping message, stop measuring the downlink reference signals.

16. The terminal of claim 15, wherein the preset algorithm comprises weighted summation, averaging or averaging without extremums.