For example, if the secondary cell is unknown, it determines that the state of the carrier corresponding to the secondary cell is state 1, and if the frequency range to which the secondary cell belongs is FR1 (referring to a frequency range, for example, 450MHz-6000MHz), then it is determined that the state of the carrier corresponding to the secondary cell is state 2, or other states can also be determined.

[0088] Exemplarily, the embodiments of the present application include 9 types of state of carrier. The 9 types of states of carrier are shown in Table 1:

[0089] Table 1

Number of state	State of carrier
1	If the secondary cell is known and belongs to FR1, and the measurement cycle of the secondary cell is equal to or smaller than 160ms
2	If the secondary cell is known and belongs to FR1, and the measurement cycle of the secondary cell is larger than 160ms
3	If the secondary cell is unknown and belongs to FR1, provided that the side condition $\hat{E}s/Iot \geqslant -2dB$ (ratio) is fulfilled
4	If the activated secondary cell belongs to FR2 and there is at least one active serving cell on the FR2 band, and - SMTC for the target SCell is provided to the terminal, and - The SSBs in the serving cell(s) and the SSBs in the SCell fulfill the condition defined in Section 3.6.3, - The parameter ssb-PositionsInBurst is the same for the serving cell(s) and SCell
5	If the activated SCell belongs to FR2 and there is at least one active serving cell on the FR2 band, if the terminal is not provided with any SMTC for the target SCell - The Reference Symbol (RS) of the activated SCell is Quasi Co-Location (QCL)-TypeD with RS(s) of one active serving cell on that FR2 frequency band
6	If the activated SCell belongs to FR2, and there is no active serving cell on the FR2 band provided that the primary cell (PCell) or the primary secondary cell (PSCell) is in FR1 or in FR2; if the target secondary cell (SCell) is known to the terminal and semi-persistent Channel State Information (CSI)-RS is used for CSI reporting.
7	If the activated SCell belongs to FR2, and if there is no active serving cell on the FR2 band provided that PCell or PSCell is in FR1 or in FR2: If the target SCell is known to the terminal and semi-persistent CSI-RS is used for CSI reporting, if the target SCell is known to the terminal and periodic CSI-RS is used for CSI reporting.
8	If the PCell/PSCell and the target SCell are in a band pair with independent beam management, and the target SCell is unknown to the terminal, and the semi-persistent CSI-RS is used for CSI reporting, provided that the side condition $\hat{E}s/Iot \geqslant -2dB$ is fulfilled.
9	If the PCell/PSCell and the target SCell are in a band pair with independent beam management, and the target SCell is unknown to the terminal, and periodic CSI-RS is used for CSI reporting, provided that the side condition

	cycle of the secondary cell is larger than 160ms			time-frequency synchronization
3	If the secondary cell is unknown and belongs to FR1, provided that the side condition Ês/Iot⩾-2dB is fulfilled	8	4	AGC setting and time-frequency synchronization
4	If the activated secondary cell belongs to FR2 and there is at least one active serving cell on the FR2 band, and - SMTC for the target SCell is provided to the terminal, and - The SSBs in the serving cell(s) and the SSBs in the SCell fulfill the condition defined in clause 3.6.3, - The parameter ssb-PositionsInBurst is same for the serving cell(s) and the SCell	4	2	Time-frequency synchronization
5	If the activated SCell belongs to FR2 and there is at least one active serving cell on the FR2 band, if the terminal is not provided with any SMTC for the target SCell - the RS(s) of the activated SCell is(are) QCL-TypeD with RS(s) of one active serving cell on that FR2 band	0	0	None
6	If the activated SCell belongs to FR2, and there is no active serving cell on the FR2 band provided that PCell or PSCell is in FR1 or in FR2: If the target SCell is known to the terminal and semi-persistent CSI-RS is used for CSI reporting	6	3	AGC setting and time-frequency synchronization
7	If the activated SCell belongs to FR2, and if there is no active serving cell on the FR2 band provided that PCell or PSCell is in FR1 or in FR2: If the target SCell is known to the terminal and semi-persistent CSI-RS is used for CSI reporting. If the target SCell is known to the terminal and periodic CSI-RS is used for CSI reporting	6	3	AGC setting and time-frequency synchronization
8	If the PCell/PSCell and the target SCell are in a band pair with independent beam management, and the target SCell is unknown to the terminal, and semi-persistent CSI-RS is used for CSI reporting, provided that the side condition Ês/Iot⩾- 2dB is fulfilled	48	24	AGC setting and time-frequency synchronization of a plurality of beams
9	If the PCell/PSCell and the target SCell are in a band pair with independent beam	48	24	AGC setting and

WHAT IS CLAIMED IS:

1. A method for activating a secondary cell, applied to a terminal, the method comprising:

receiving a reference signal activation signaling, wherein the reference signal activation signaling is used for activating a reference signal, and the reference signal is used for activation of the secondary cell; and

receiving the reference signal based on the reference signal activation signaling, and activating the secondary cell.

2. The method of claim 1, wherein:

the reference signal activation signaling is any one of an MAC CE or a DCI.

3. The method of claim 1, wherein:

the reference signal activation signaling is an MAC CE, and a starting time domain position of the reference signal is a time domain position corresponding to a first preset duration after a moment when the MAC CE is sent; or, the starting time domain position of the reference signal is a time domain position corresponding to a second preset duration after a moment when a confirmation message of the MAC CE is sent.

4. The method of claim 1, wherein:

the reference signal activation signaling is a DCI, and a starting time domain position of the reference signal is a time domain position corresponding to a third preset duration after a moment when the DCI is sent.

5. The method of claim 4, wherein the third preset duration is determined by the following formula:

$$T_{proc} = N_1 \cdot (2048 + 144) \cdot k \cdot 2^{-\mu} \cdot T_c$$

wherein T_{proc} is the third preset duration, k and T_c are constants, μ=0, 1, 2, 3, and N_1 is a processing time of PDSCH.

6. The method of claim 1, wherein a starting time domain position of the reference signal overlaps with a time domain position of an SSB of an activated carrier.

7. The method of claim 1, wherein a starting time domain position of the reference signal is determined according to a state of a carrier corresponding to the secondary cell.

8. The method of claim 1, wherein a time domain length of the reference signal is determined according to a state of a carrier corresponding to the secondary cell, or the time domain length of the reference signal is indicated by a reference signal configuration signaling sent by a network device, or the time domain length of the reference signal is a preset length.

9. The method of claim 8, wherein the time domain length of the reference signal is represented

by a number of time domain units, or the time domain length of the reference signal is represented by a number of repeated transmissions of the reference signal.

10. The method of claim 9, wherein the time domain unit is a symbol, or the time domain unit is a slot.

11. The method of any one of claims 1-10, wherein the reference signal is a tracking reference signal (TRS).

12. A method for activating a secondary cell, applied to a network device, the method comprising:

sending a reference signal activation signaling, wherein the reference signal activation signaling is used for activating a reference signal, and the reference signal is used for activation of the secondary cell; and

sending the reference signal based on the reference signal activation signaling.

13. The method of claim 12, wherein:

the reference signal activation signaling is any one of an MAC CE or a DCI.

14. The method of claim 12, wherein:

the reference signal activation signaling is an MAC CE, and a starting time domain position of the reference signal is a time domain position corresponding to a first preset duration after a moment when the MAC CE is sent; or, the starting time domain position of the reference signal is a time domain position corresponding to a second preset duration after a moment when a confirmation message of the MAC CE is sent.

15. The method of claim 12, wherein a time domain length of the reference signal is determined according to a state of a carrier corresponding to the secondary cell, or the time domain length of the reference signal is indicated by a reference signal configuration signaling sent by a network device, or the time domain length of the reference signal is a preset length.

16. The method of claim 15, wherein the time domain length of the reference signal is represented by a number of time domain units, or the time domain length of the reference signal is represented by a number of repeated transmissions of the reference signal.

17. The method of any one of claims 12-16, wherein the reference signal is a tracking reference signal (TRS).

18. A terminal, comprising:

a processor;

a transceiver connected to the processor;

a memory for storing executable program codes for the processor;

wherein the processor is configured to load and execute the executable program codes to enable

the terminal to implement the method for activating a secondary cell of any one of claims 1 to 11.

19. A network device, comprising:

a processor;

a transceiver connected to the processor;

a memory for storing executable program codes for the processor;

wherein the processor is configured to load and execute the executable program codes to enable the network device to implement the method for activating a secondary cell of any one of claims 12 to 17.

20. A computer-readable storage medium, wherein the readable storage medium stores executable program codes, and the executable program codes are loaded and executed by a processor to implement the method for activating a secondary cell of any one of claims 1 to 17.