

Claims

[Claim 1]

. ~~A terminal apparatus configured to communicate with a~~ base station apparatus for ~~communicating with a terminal apparatus by using a first cell and a second cell~~, the ~~base station~~terminal apparatus comprising:

~~a transmitter~~ reception circuitry configured to receive a downlink signal in the first cell; and

transmission circuitry configured to transmit a downlink signal by using a first component carrier and a second component carrier; and
~~a receiver configured to receive an uplink signal transmitted by the terminal apparatus by using at least the second component carrier in the first cell~~, wherein:

the transmitter transmits ~~reception circuitry is further configured to receive~~ spatial relation information ~~in for~~ the uplink signal;
in the first cell, the spatial relation information ~~is information~~ indicating a spatial domain transmission filter used for transmitting the uplink signal, and

the spatial relation information in the second component carrier includes information a cell identifier indicating the ~~first component carrier~~second cell.

[Claim 2]

. The ~~base station~~terminal apparatus according to claim 1, wherein

the spatial relation information in the second component carrierfirst cell further includes information indicating a ~~synchronization signal or~~ bandwidth part for the second cell.

3. A base station apparatus configured to communicate with a terminal apparatus by using a channel state information reference first cell and a second cell, the base station

apparatus comprising:

transmission circuitry configured to transmit a downlink signal in the first cell;

and

reception circuitry configured to receive an uplink signal or a sounding reference signal transmitted on the first component carrier cell, wherein:

~~[Claim 3]~~

~~The base station apparatus according to claim 2, wherein~~

~~the transmission circuitry is further configured to transmit spatial relation information for the uplink signal is in the first cell, the spatial relation information indicating a sounding reference spatial domain transmission filter used for transmitting the uplink signal transmitted on, and~~

~~the spatial relation information includes a cell identifier indicating the second component carrier cell.~~

~~[Claim 4]~~

~~The base station apparatus according to claim 2, wherein~~

~~the uplink signal is an uplink control signal transmitted on the second component carrier.~~

~~[Claim 5]~~

~~. The base station apparatus according to claim 3, wherein~~

~~the spatial relation information in the second component carrier is associated with a first slot configuration indicating a slot configuration of the first component carrier and a second slot configuration indicating a slot configuration of the second component carrier~~ first cell further includes information indicating a bandwidth part for the second cell.

[Claim 6]

~~The base station~~5. A communication method for a terminal apparatus according to claim 5, wherein,
~~in a case that the first slot configuration is different from the second slot configuration, the spatial relation information in the second component carrier includes a prescribed signal transmitted on the first component carrier.~~

[Claim 7]

~~A terminal apparatus for communicating~~communicate with a base station apparatus;~~the terminal apparatus comprising:~~
~~a receiver configured to receive a downlink signal~~ by using a first component carrier~~cell~~ and a second ~~component carrier, and~~cell, the communication method comprising:

receiving a transmitter configured to transmit~~downlink signal in the first cell;~~
transmitting an uplink signal by using ~~the first component carrier and~~in the ~~second component carrier, wherein~~first cell; and

~~the receiver receives~~ receiving spatial relation information ~~associated with~~for the uplink signal in the ~~second component carrier,~~

first cell, the spatial relation information includes information indicating
~~the first component carrier, and~~

~~based on the spatial relation information, the transmitter uses a spatial domain reception filter configured by the receiver in receiving a prescribed signal included in the first component carrier, to configure a spatial domain transmission filter configured for the uplink signal transmitted on the second component carrier.~~

[Claim 8]

~~A communication method for a base station apparatus for communicate with a terminal apparatus, the communication method comprising the steps of:~~
~~transmitting a downlink signal by using a first component carrier and a second component carrier;~~

~~receiving an uplink signal transmitted by the terminal apparatus by using at least the second component carrier; and~~

~~transmitting spatial relation information in the uplink signal, wherein~~

~~the spatial relation information is information~~ indicating a spatial domain transmission filter
used for transmitting the uplink signal, ~~and~~ wherein
the spatial relation information ~~in the second component carrier~~ includes ~~information~~ a
cell identifier indicating the ~~first component carrier~~ second cell.