

【Claims】

1. A method of receiving a synchronization signal block (SSB) by a user equipment (UE) in a wireless communication system, the method comprising:

receiving, from a base station (BS), a downlink signal in a frequency band that is greater than 6 GHz; and

processing the received downlink signal to obtain at least one SSB comprising a plurality of symbols,

wherein the downlink signal comprises a plurality of candidate SSB regions in which the at least one SSB can be received,

wherein, for a subcarrier spacing of 120 kHz, first symbol positions for the plurality of candidate SSB regions within a half-frame are indexed by $\{4, 8, 16, 20\} + 28*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18$, and where $n=0$ is an initial symbol position in the half-frame, and

wherein, for the subcarrier spacing of 240 kHz, the first symbol positions for the plurality of candidate SSB regions within the half-frame are indexed by $\{8, 12, 16, 20, 32, 36, 40, 44\} + 56*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8$, and where $n=0$ is the initial symbol position in the half-frame.

2. The method according to claim 1, wherein each candidate SSB region among the plurality of candidate SSB regions is defined by 4 candidate SSBs that are disposed in 4 time-consecutive symbols starting at the respective first symbol position of the candidate SSB region.

3. The method according to claim 1, wherein the half-frame spans a plurality of time slots, each time slot having a duration of 14 symbols,

wherein the half-frame comprises a plurality of unit regions, with each unit region spanning a first number of time slots among the plurality of time slots of the half-frame, and

wherein in each unit region:

two groups of candidate SSB regions are separated by a first number of symbols, with each group defined by a plurality of adjacent SSB regions,

a first group of adjacent candidate SSB regions among the two groups is preceded by the first number of symbols in the unit region, and

a second group of adjacent candidate SSB regions among the two groups is followed by the first number of symbols in the unit region.

4. The method according to claim 3, wherein for the subcarrier spacing of 120 kHz, the first number of time slots in each unit region is equal to 2 time slots,

wherein the first number of symbols that separate the two groups of candidate SSB regions in the unit region is equal to 4 symbols, and

wherein each group among the two groups is defined by 2 adjacent candidate SSB regions spanning 8 consecutive symbols in time.

5. The method according to claim 3, wherein for the subcarrier spacing of 240 kHz, the first number of time slots in each unit region is equal to 4 time slots,

wherein the first number of symbols that separate the two groups of candidate SSB regions in the unit region is equal to 8 symbols, and

wherein each group among the two groups is defined by 4 adjacent candidate SSB regions spanning 16 consecutive symbols in time.

6. The method according to claim 3, wherein the half-frame comprising the plurality of unit regions is defined by 16 unit regions, and

wherein the 16 unit regions in the half-frame are distributed in 4 sets of 4 adjacent unit regions in each set, with each set separated by an interval that is equal to a duration of a single unit region.

7. The method according to claim 6, wherein the duration of a single unit region is equal to 0.25 ms,

wherein for the subcarrier spacing of 120 kHz, the single unit region spans 2 time slots, and

wherein for the subcarrier spacing of 240 kHz, the single unit region spans 4 time slots.

8. The method of claim 3, wherein for the subcarrier spacing of 120 kHz, each time slot has a duration of 0.125 ms, and

wherein for the subcarrier spacing of 240 kHz, each time slot has a duration of 0.0625 ms.

9. The method of claim 1, wherein the half-frame has a duration of 5 ms.

10. A user equipment (UE) configured to receive a synchronization signal block (SSB) in a wireless communication system, the UE comprising:

a transceiver;

at least one processor; and

at least one computer memory operably connectable to the at least one processor and storing instructions that, when executed, cause the at least one processor to perform operations comprising:

receiving, from a base station (BS) through the transceiver, a downlink signal in a frequency band that is greater than 6 GHz; and

processing the received downlink signal to obtain at least one SSB comprising a plurality of symbols,

wherein the downlink signal comprises a plurality of candidate SSB regions in which the at least one SSB can be received,

wherein, for a subcarrier spacing of 120 kHz, first symbol positions for the plurality of candidate SSB regions within a half-frame are indexed by $\{4, 8, 16, 20\} + 28*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18$, and where $n=0$ is an initial symbol position in the half-frame, and

wherein, for the subcarrier spacing of 240 kHz, the first symbol positions for the plurality of candidate SSB regions within the half-frame are indexed by $\{8, 12, 16, 20, 32, 36, 40, 44\} + 56*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8$, and where $n=0$ is the initial symbol position in the half-frame.

11. A method of transmitting, by a base station (BS), a synchronization signal block (SSB) in a wireless communication system, the method comprising:

determining a downlink signal comprising at least one SSB comprising a plurality of symbols; and

transmitting, to a user equipment (UE), the downlink signal in a frequency band that is greater than 6 GHz,

wherein the downlink signal comprises a plurality of candidate SSB regions in which the at least one SSB can be received by the UE,

wherein, for a subcarrier spacing of 120 kHz, first symbol positions for the plurality of candidate SSB regions within a half-frame are indexed by $\{4, 8, 16, 20\} + 28*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18$, and where $n=0$ is an initial symbol position in the half-frame, and

wherein, for the subcarrier spacing of 240 kHz, the first symbol positions for the plurality of candidate SSB regions within the half-frame are indexed by $\{8, 12, 16, 20, 32, 36, 40, 44\} + 56*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8$, and where $n=0$ is the initial symbol position in the half-frame.

12. A base station (BS) configured to transmit a synchronization signal block (SSB) in a wireless communication system, the BS comprising:

a transceiver;

at least one processor; and

at least one computer memory operably connectable to the at least one processor and storing instructions that, when executed, cause the at least one processor to perform operations comprising:

determining a downlink signal comprising at least one SSB comprising a plurality of symbols; and

transmitting, to a user equipment (UE) through the transceiver, the downlink signal in a frequency band that is greater than 6 GHz,

wherein the downlink signal comprises a plurality of candidate SSB regions in which the at least one SSB can be received by the UE,

wherein, for a subcarrier spacing of 120 kHz, first symbol positions for the plurality of candidate SSB regions within a half-frame are indexed by $\{4, 8, 16, 20\} + 28*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18$, and where $n=0$ is an initial symbol position in the half-frame, and

wherein, for the subcarrier spacing of 240 kHz, the first symbol positions for the plurality of candidate SSB regions within the half-frame are indexed by $\{8, 12, 16, 20, 32, 36, 40, 44\} + 56*n$, where $n=0, 1, 2, 3, 5, 6, 7, 8$, and where $n=0$ is the initial symbol position in the half-frame.