

CLAIMS

1. A user equipment (UE) for wireless communication, comprising:
at least one memory; and
at least one processor coupled with the at least one memory and
configured to cause the UE to:
receive, in a main radio (MR), a configuration of a lower
power wake-up signal (LP-WUS) to be transmitted in a lower power wake-
up radio (LP-WUR); and
switch between operation in the MR and operation in the LP-
WUR, according to one of an explicit indication and one or more pre-
configured conditions.
2. The UE of claim 1, wherein
switching between operation in the MR and operation in the LP-
WUR comprises one or more of:
(1) activating LP-WUS monitoring in a first frequency band in the
LP-WUR;
(2) activating the LP-WUS monitoring in the first frequency band in
the LP-WUR; and
(3) switching between monitoring the LP-WUS in the first frequency
band in the LP-WUR and monitoring a control signal in a second frequency
band in the MR.
3. The UE of claim 1, wherein
the explicit indication is included in system information and/or radio
resource control (RRC) signaling.
4. The UE of claim 3, wherein
the explicit indication indicates the UE switching from the MR to the
LP-WUR, and
the explicit indication is or is included in a RRC connection release
message.

5. The UE of claim 4, wherein
a gap duration is one of configured, preconfigured, and
predetermined, where the gap duration starts from one of the reception of the
RRC connection release message and from the UE having switched from
connected mode to one of idle and inactive mode, and
the UE switches from the MR to the LP-WUR after the gap duration.
6. The UE of claim 5, wherein
the gap duration ends after the UE monitors a paging occasion
including no paging message for the UE.
7. The UE of claim 5, wherein one or more of:
a time length of the gap duration is determined by a relationship of a
first frequency band and a second frequency band;
the time length of the gap duration is determined by a subcarrier
spacing of the first frequency band and/or a subcarrier spacing of the second
frequency band; and
the time length of the gap duration is configured by higher layer.
8. The UE of claim 3, wherein
the explicit indication indicates the UE switching from the MR to the
LP-WUR, and
the explicit indication is included in a RRC configuration message.
9. The UE of claim 8, wherein
a gap duration is one of configured, preconfigured, and
predetermined, where the gap duration starts from one of the reception of the
RRC configuration message and from a transmission of a HARQ feedback
for a reception of the RRC configuration message, and
the UE switches from the MR to the LP-WUR after the gap duration.
10. The UE of claim 3, wherein

the explicit indication that indicates the UE switching from the MR to the LP-WUR is included in a secondary cell (SCell) activation triggering message or an SCell configuration, and

wherein the explicit indication that indicates the UE switching from the LP-WUR to the MR is included in one of a SCell deactivation triggering message and an SCell deactivation configuration.

11. The UE of claim 1, wherein
the explicit indication indicates the UE switching from the MR to the LP-WUR, and
the explicit indication is included in a control signal.
12. The UE of claim 11, wherein
one or more LP-WUS activation fields are included in the control signal.
13. The UE of claim 12, wherein
a LP-WUS activation field of the one or more LP-WUS activation fields and a corresponding wakeup signal indication field jointly indicate the switching from the MR to the LP-WUR.
14. The UE of claim 12, wherein
the LP-WUS activation field is in a paging short message in the control signal with a Cyclic Redundancy Check (CRC) scrambled by a Paging Radio Network Temporary Identifier (P-RNTI).
15. The UE of claim 11, wherein
specific states of a paging indication field and a Tracking Reference Signal (TRS) availability indication field in the control signal indicate the switching from the MR to the LP-WUR.
16. The UE of claim 1, wherein
the explicit indication indicates the UE switching from the LP-WUR to the MR, and

the explicit indication is included a lower power synchronization signal (LP-SS) or the LP-WUS or a combination of the LP-SS and the LP-WUS, where both the LP-SS and the LP-WUS are transmitted in the LP-WUR.

17. The UE of claim 1, wherein

the pre-configured condition is a measurement value being larger or smaller than a threshold.

18. A processor in a UE for wireless communication, the processor comprising:

at least one controller coupled with at least one memory and configured to cause the processor to:

receive, in a main radio (MR), a configuration of a lower power wake-up signal (LP-WUS) to be transmitted in a lower power wake-up radio (LP-WUR); and

switch between operation in the MR and operation in the LP-WUR, according to one of an explicit indication and one or more pre-configured conditions.

19. A method performed by a user equipment (UE), the method comprising:

receiving, in a main radio (MR), a configuration of a lower power wake-up signal (LP-WUS) to be transmitted in a lower power wake-up radio (LP-WUR); and

switching between operation in the MR and operation in the LP-WUR, according to one of an explicit indication and one or more pre-configured conditions.

20. A base station for wireless communication, comprising:

at least one memory; and

at least one processor coupled with the at least one memory and configured to cause the base station to:

transmit, in a main radio (MR), a configuration of a lower power wake-up signal (LP-WUS) to be transmitted in a lower power wake-up radio (LP-WUR); and

switch between operation in the MR and operation in the LP-WUR, according to one of an explicit indication and one or more pre-configured conditions.