

~~Claims~~
CLAIMS

[Claim 1]

A terminal apparatus comprising:

a receiver configured to monitor a Physical Downlink Control CHannel (PDCCH) with a Downlink Control Information (DCI) format on an active downlink BandWidth Part (BWP) in a serving cell ~~in a Secondary Cell Group (SCG),~~ the DCI format being used for scheduling a Physical Downlink Shared CHannel (PDSCH₇) and receive the PDSCH on the active downlink BWP; and

a transmitter configured to transmit a Hybrid Automatic Repeat reQuest ACKnowledgement (HARQ-ACK) on a Physical Uplink Control CHannel (PUCCH₇) wherein

a value N_{RIV} of a frequency domain resource allocation field included in the DCI format is equal to $N_{BWP}^{size} * (L_{RBs} - 1) + RB_{start}$ in a case that $L_{RBs} - 1$ is equal to or smaller than $\text{floor}(N_{BWP}^{size}/2)$,

the value N_{RIV} is equal to $N_{BWP}^{size} * (N_{BWP}^{size} - L_{RBs} + 1) + (N_{BWP}^{size} - 1 - RB_{start})$ in a case that $L_{RBs} - 1$ is larger than $\text{floor}(N_{BWP}^{size}/2)$,

the $\text{floor}(N_{BWP}^{size}/2)$ ~~represents~~is a largest integer within a range that does not exceed the $N_{BWP}^{size}/2$,

the RB_{start} is a starting resource block for allocation of the PDSCH,

the L_{RBs} is ~~at~~the number of allocated resource blocks ~~allocated to~~for the PDSCH, and

the N_{BWP}^{size} is given based on whether or not a control resource set with an index 0 is configured,

the N_{BWP}^{size} is given based on the number of resource blocks ~~in~~for an initial downlink BWP configured by ~~at~~the first parameter in a case that the ~~DCI format is detected in a common search space.~~

~~[Claim 2]~~

~~The terminal apparatus according to claim 1, wherein~~

~~the N_{BWP}^{size} is given~~

~~based on the number of resource blocks in the initial downlink BWP in a case that a control resource set with an~~the ~~index 0 is not configured by a second parameter different from the first parameter and the DCI format is detected in the common search space, and~~

the $N_{\text{BWP}}^{\text{size}}$ is given based on the number of resource blocks for the control resource set with the index 0 in a case that the control resource set with the index 0 is configured by a second parameter different from the first parameter and the DCI format is detected in the common search space. ____

[Claim 2]

[Claim 3]

A base station apparatus, comprising:

a transmitter, configured to transmit a Physical Downlink Control CHannel (PDCCH) with a Downlink Control Information (DCI) format on an active downlink BandWidth Part (BWP) in a serving cell ~~in a Secondary Cell Group (SCG)~~, the DCI format being used for scheduling a Physical Downlink Shared CHannel (PDSCH), and transmit the PDSCH on the active downlink BWP; and

a receiver configured to receive a Hybrid Automatic Repeat reQuest ACKnowledgement (HARQ-ACK) on a Physical Uplink Control CHannel (PUCCH), wherein

a value N_{RIV} of a frequency domain resource allocation field included in the DCI format is equal to $N_{\text{BWP}}^{\text{size}} * (L_{\text{RBs}} - 1) + \text{RB}_{\text{start}}$ in a case that $L_{\text{RBs}} - 1$ is equal to or smaller than $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$,

the value N_{RIV} is equal to $N_{\text{BWP}}^{\text{size}} * (N_{\text{BWP}}^{\text{size}} - L_{\text{RBs}} + 1) + (N_{\text{BWP}}^{\text{size}} - 1 - \text{RB}_{\text{start}})$ in a case that $L_{\text{RBs}} - 1$ is larger than $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$,

the $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$ ~~represents~~ is a largest integer within a range that does not exceed the $N_{\text{BWP}}^{\text{size}}/2$,

the RB_{start} is a starting resource block for allocation of the PDSCH,

the L_{RBs} is at ~~the~~ number of ~~resource blocks~~ resource blocks for the PDSCH, ~~and~~

the $N_{\text{BWP}}^{\text{size}}$ is given based on whether or not a control resource set with an index 0 is configured,

the $N_{\text{BWP}}^{\text{size}}$ is given based on the number of resource blocks ~~in~~ for an initial downlink BWP configured by at ~~the~~ first parameter in a case that the ~~DCI format is detected in a common search space.~~

[Claim 4]

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

~~the $N_{\text{BWP}}^{\text{size}}$ is given~~

~~based on the number of resource blocks in the initial downlink BWP in a case that a control resource set with an~~the index 0 is not configured ~~by a second parameter different from the first parameter~~ and the DCI format is detected in the common search space, and

~~the $N_{\text{BWP}}^{\text{size}}$ is given~~ based on the number of resource blocks for the control resource set with the index 0 in a case that the control resource set with the index 0 is configured ~~by a second parameter different from the first parameter~~ and the DCI format is detected in the common search space.

[Claim 3]

{Claim 5}

A communication method used for a terminal apparatus, the communication method comprising ~~the steps of:~~

monitoring a Physical Downlink Control CHannel, PDCCH_i with a Downlink Control Information, DCI_i format on an active downlink BandWidth Part, BWP_i in a serving cell ~~in a Secondary Cell Group (SCG)~~_i, the DCI format being used for scheduling a Physical Downlink Shared CHannel, PDSCH;

receiving the PDSCH on the active downlink BWP; and

transmitting a Hybrid Automatic Repeat reQuest ACKnowledgement, HARQ-ACK_i on a Physical Uplink Control CHannel, PUCCH, wherein

a value N_{RIV} of a frequency domain resource allocation field included in the DCI format is equal to $N_{\text{BWP}}^{\text{size}} * (L_{\text{RBs}} - 1) + \text{RB}_{\text{start}}$ in a case that $L_{\text{RBs}} - 1$ is equal to or smaller than $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$,

the value N_{RIV} is equal to $N_{\text{BWP}}^{\text{size}} * (N_{\text{BWP}}^{\text{size}} - L_{\text{RBs}} + 1) + (N_{\text{BWP}}^{\text{size}} - 1 - \text{RB}_{\text{start}})$ in a case that $L_{\text{RBs}} - 1$ is larger than $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$,

the $\text{floor}(N_{\text{BWP}}^{\text{size}}/2)$ ~~represents~~is a largest integer within a range that does not exceed ~~the~~ $N_{\text{BWP}}^{\text{size}}/2$,

the RB_{start} is a starting resource block for allocation of the PDSCH,

the L_{RBs} is ~~at~~the number of ~~resource blocks~~ allocated ~~to~~resource blocks for the PDSCH, ~~and~~

~~the $N_{\text{BWP}}^{\text{size}}$ is given based on whether or not a control resource set with an index 0 is configured,~~

the $N_{\text{BWP}}^{\text{size}}$ is given based on the number of resource blocks ~~in~~for an initial downlink BWP configured by ~~at~~the first parameter in a case that the ~~DCI format is detected in a common search space.~~

[Claim 6]

The communication method according to claim 5, wherein
the N_{BWP}^{size} is given
based on the number of resource blocks in the initial downlink BWP in a case
that a control resource set with ~~an~~the index 0 is not configured ~~by a second parameter~~
~~different from the first parameter~~ and the DCI format is detected in the common search
space, and
based on the number of resource blocks for the control resource set with the
index 0 in a case that the control resource set with the index 0 is configured and the DCI
format is detected in the common search space.

[Claim 7]

A communication method used for a base station apparatus, the communication
method comprising the steps of:

transmitting a PDCCH with a DCI format on an active downlink BWP in a
serving cell in a Secondary Cell Group (SCG), the DCI format being used for
scheduling a PDSCH;

transmitting the PDSCH on the downlink BWP; and

receiving a HARQ-ACK on a PUCCH, wherein

a value N_{RIV} of a frequency domain resource allocation field included in the DCI
format is equal to $N_{BWP}^{size} * (L_{RBs} - 1) + RB_{start}$, in a case that $L_{RBs} - 1$ is equal to or
smaller than $\text{floor}(N_{BWP}^{size}/2)$,

the value N_{RIV} is equal to $N_{BWP}^{size} * (N_{BWP}^{size} - L_{RBs} + 1) + (N_{BWP}^{size} - 1 - RB_{start})$
in a case that $L_{RBs} - 1$ is larger than $\text{floor}(N_{BWP}^{size}/2)$,

the $\text{floor}(N_{BWP}^{size}/2)$ represents a largest integer within a range that does not
exceed $N_{BWP}^{size}/2$,

the RB_{start} is a starting resource block for allocation of the PDSCH,

the L_{RBs} is a number of resource blocks allocated to the PDSCH, and

the N_{BWP}^{size} is given based on the number of resource blocks in an initial
downlink BWP configured by a first parameter in a case that the DCI format is detected
in a common search space.

[Claim 8]

The communication method according to claim 7, wherein

the N_{BWP}^{size} is given

~~based on the number of resource blocks in the initial downlink BWP in a case that a control resource set with an index 0 is not configured by a second parameter different from the first parameter and the DCI format is detected in the common search space, and~~

the $N_{\text{BWP}}^{\text{size}}$ is given based on the number of resource blocks for the control resource set with the index 0 in a case that the control resource set with the index 0 is configured by a second parameter different from the first parameter and the DCI format is detected in the common search space.