

CLAIMS

What is claimed is:

- 1 1. A method for wireless communication, comprising:
2 receiving a first downlink shared channel transmission over a first set of
3 frequency resources in a first transmission time interval (TTI);
4 receiving a downlink control transmission comprising a grant of a second set
5 of frequency resources of a second TTI for a second downlink shared channel transmission,
6 wherein the downlink control transmission comprises an indication that a demodulation
7 reference signal of the first downlink shared channel transmission is reused for the second
8 downlink shared channel transmission;
9 determining whether to rate match the second downlink shared channel
10 transmission around resources of the second set of frequency resources that are not part of the
11 first set of frequency resources; and
12 receiving the second downlink shared channel transmission over at least a
13 subset of the second set of frequency resources of the second TTI based at least in part on the
14 determining whether to rate match the second downlink shared channel transmission.
- 1 2. The method of claim 1, wherein the determining whether to rate match
2 the second downlink shared channel transmission comprises determining to rate match the
3 second downlink shared channel transmission around resources corresponding to a second
4 downlink control transmission in the first TTI.
- 1 3. The method of claim 1, wherein the second set of frequency resources
2 encompasses the resources corresponding to a second downlink control transmission in the
3 first TTI.
- 1 4. The method of claim 1, wherein the determining whether to rate match
2 the second downlink shared channel transmission is based at least in part on a number of
3 layers of the second downlink shared channel transmission.
- 1 5. The method of claim 1, further comprising:
2 determining that the resources of the second set of frequency resources that are
3 not part of the first set of frequency resources are associated with a second downlink control

4 transmission in the first TTI, the second downlink control transmission comprising a control
5 channel demodulation reference signal; and
6 receiving at least a portion of the second downlink shared channel
7 transmission over the resources in the second TTI.

1 6. The method of claim 5, further comprising:
2 demodulating the at least the portion of the second downlink shared channel
3 transmission using the control channel demodulation reference signal.

1 7. The method of claim 1, wherein:
2 the downlink control transmission comprises a rate matching indicator; and
3 the determining whether to rate match the second downlink shared channel
4 transmission is based at least in part on the rate matching indicator.

1 8. The method of claim 7, wherein:
2 the rate matching indicator comprises a first indicator associated with a first
3 group of resources of the second set of frequency resources and a second indicator associated
4 with a second group of resources of the second set of frequency resources; and
5 the determining whether to rate match comprises determining whether to rate
6 match around the resources of the second set of frequency resources that are not part of the
7 first set of frequency resources for the first group of resources and the second group of
8 resources.

1 9. The method of claim 1, wherein the demodulation reference signal of
2 the first downlink shared channel transmission is used for channel estimation for all allocated
3 frequency resource blocks of the second TTI.

1 10. An apparatus for wireless communications, comprising:
2 a processor,
3 memory in electronic communication with the processor; and
4 instructions stored in the memory and executable by the processor, to cause
5 the apparatus to:
6 receive a first downlink shared channel transmission over a first set of
7 frequency resources in a first transmission time interval (TTI);
8 receive a downlink control transmission comprising a grant of a second
9 set of frequency resources of a second TTI for a second downlink shared channel

10 transmission, wherein the downlink control transmission comprises an indication that
11 a demodulation reference signal of the first downlink shared channel transmission is
12 reused for the second downlink shared channel transmission;
13 determine whether to rate match the second downlink shared channel
14 transmission around resources of the second set of frequency resources that are not
15 part of the first set of frequency resources; and
16 receive the second downlink shared channel transmission over at least a subset
17 of the second set of frequency resources of the second TTI based at least in part on the
18 determining whether to rate match the second downlink shared channel transmission.

1 11. The apparatus of claim 10, wherein the determining whether to rate
2 match the second downlink shared channel transmission comprises determining to rate match
3 the second downlink shared channel transmission around resources corresponding to a second
4 downlink control transmission in the first TTI.

1 12. The apparatus of claim 10, wherein the second set of frequency
2 resources encompasses the resources corresponding to a second downlink control
3 transmission in the first TTI.

1 13. The apparatus of claim 10, wherein the determining whether to rate
2 match the second downlink shared channel transmission is based at least in part on a number
3 of layers of the second downlink shared channel transmission.

1 14. The apparatus of claim 10, wherein the instructions are further
2 executable by the processor to cause the apparatus to:
3 determine that the resources of the second set of frequency resources that are
4 not part of the first set of frequency resources are associated with a second downlink control
5 transmission in the first TTI, the second downlink control transmission comprising a control
6 channel demodulation reference signal; and
7 receive at least a portion of the second downlink shared channel transmission
8 over the resources in the second TTI.

1 15. The apparatus of claim 14, wherein the instructions are further
2 executable by the processor to cause the apparatus to:
3 demodulate the at least the portion of the second downlink shared channel
4 transmission using the control channel demodulation reference signal.

1 16. The apparatus of claim 10, wherein:
2 the downlink control transmission comprises a rate matching indicator; and
3 the determining whether to rate match the second downlink shared channel
4 transmission is based at least in part on the rate matching indicator.

1 17. The apparatus of claim 16, wherein:
2 the rate matching indicator comprises a first indicator associated with a first
3 group of resources of the second set of frequency resources and a second indicator associated
4 with a second group of resources of the second set of frequency resources; and
5 the determining whether to rate match comprises determining whether to rate
6 match around the resources of the second set of frequency resources that are not part of the
7 first set of frequency resources for the first group of resources and the second group of
8 resources.

1 18. The apparatus of claim 10, wherein the demodulation reference signal
2 of the first downlink shared channel transmission is used for channel estimation for all
3 allocated frequency resource blocks of the second TTI.

1 19. An apparatus for wireless communications, comprising:
2 means for receiving a first downlink shared channel transmission over a first
3 set of frequency resources in a first transmission time interval (TTI);
4 means for receiving a downlink control transmission comprising a grant of a
5 second set of frequency resources of a second TTI for a second downlink shared channel
6 transmission, wherein the downlink control transmission comprises an indication that a
7 demodulation reference signal of the first downlink shared channel transmission is reused for
8 the second downlink shared channel transmission;
9 means for determining whether to rate match the second downlink shared
10 channel transmission around resources of the second set of frequency resources that are not
11 part of the first set of frequency resources; and
12 means for receiving the second downlink shared channel transmission over at
13 least a subset of the second set of frequency resources of the second TTI based at least in part
14 on the determining whether to rate match the second downlink shared channel transmission.

1 20. The apparatus of claim 19, wherein the determining whether to rate
2 match the second downlink shared channel transmission comprises determining to rate match

3 the second downlink shared channel transmission around resources corresponding to a second
4 downlink control transmission in the first TTI.

1 21. The apparatus of claim 19, wherein the second set of frequency
2 resources encompasses the resources corresponding to a second downlink control
3 transmission in the first TTI.

1 22. The apparatus of claim 19, wherein the determining whether to rate
2 match the second downlink shared channel transmission is based at least in part on a number
3 of layers of the second downlink shared channel transmission.

1 23. The apparatus of claim 19, further comprising:
2 means for determining that the resources of the second set of frequency
3 resources that are not part of the first set of frequency resources are associated with a second
4 downlink control transmission in the first TTI, the second downlink control transmission
5 comprising a control channel demodulation reference signal; and
6 means for receiving at least a portion of the second downlink shared channel
7 transmission over the resources in the second TTI.

1 24. The apparatus of claim 23, further comprising:
2 means for demodulating the at least the portion of the second downlink shared
3 channel transmission using the control channel demodulation reference signal.

1 25. The apparatus of claim 19, wherein:
2 the downlink control transmission comprises a rate matching indicator; and
3 the determining whether to rate match the second downlink shared channel
4 transmission is based at least in part on the rate matching indicator.

1 26. The apparatus of claim 25, wherein:
2 the rate matching indicator comprises a first indicator associated with a first
3 group of resources of the second set of frequency resources and a second indicator associated
4 with a second group of resources of the second set of frequency resources; and
5 the determining whether to rate match comprises determining whether to rate
6 match around the resources of the second set of frequency resources that are not part of the
7 first set of frequency resources for the first group of resources and the second group of
8 resources.

1 27. The apparatus of claim 19, wherein the demodulation reference signal
2 of the first downlink shared channel transmission is used for channel estimation for all
3 allocated frequency resource blocks of the second TTI.

1 28. A non-transitory computer-readable medium storing code for wireless
2 communications, the code comprising instructions executable by a processor to:
3 receive a first downlink shared channel transmission over a first set of
4 frequency resources in a first transmission time interval (TTI);
5 receive a downlink control transmission comprising a grant of a second set of
6 frequency resources of a second TTI for a second downlink shared channel transmission,
7 wherein the downlink control transmission comprises an indication that a demodulation
8 reference signal of the first downlink shared channel transmission is reused for the second
9 downlink shared channel transmission;
10 determine whether to rate match the second downlink shared channel
11 transmission around resources of the second set of frequency resources that are not part of the
12 first set of frequency resources; and
13 receive the second downlink shared channel transmission over at least a subset
14 of the second set of frequency resources of the second TTI based at least in part on the
15 determining whether to rate match the second downlink shared channel transmission.

1 29. The non-transitory computer-readable medium of claim 28, wherein
2 the determining whether to rate match the second downlink shared channel transmission
3 comprises determining to rate match the second downlink shared channel transmission
4 around resources corresponding to a second downlink control transmission in the first TTI.

1 30. The non-transitory computer-readable medium of claim 28, wherein
2 the second set of frequency resources encompasses the resources corresponding to a second
3 downlink control transmission in the first TTI.

1 31. The non-transitory computer-readable medium of claim 28, wherein
2 the determining whether to rate match the second downlink shared channel transmission is
3 based at least in part on a number of layers of the second downlink shared channel
4 transmission.

1 32. The non-transitory computer-readable medium of claim 28, wherein
2 the instructions are further executable by the processor to:
3 determine that the resources of the second set of frequency resources that are
4 not part of the first set of frequency resources are associated with a second downlink control
5 transmission in the first TTI, the second downlink control transmission comprising a control
6 channel demodulation reference signal; and
7 receive at least a portion of the second downlink shared channel transmission
8 over the resources in the second TTI.

1 33. The non-transitory computer-readable medium of claim 32, wherein
2 the instructions are further executable by the processor to:
3 demodulate the at least the portion of the second downlink shared channel
4 transmission using the control channel demodulation reference signal.

1 34. The non-transitory computer-readable medium of claim 28, wherein:
2 the downlink control transmission comprises a rate matching indicator; and
3 the determining whether to rate match the second downlink shared channel
4 transmission is based at least in part on the rate matching indicator.

1 35. The non-transitory computer-readable medium of claim 34, wherein:
2 the rate matching indicator comprises a first indicator associated with a first
3 group of resources of the second set of frequency resources and a second indicator associated
4 with a second group of resources of the second set of frequency resources; and
5 the determining whether to rate match comprises determining whether to rate
6 match around the resources of the second set of frequency resources that are not part of the
7 first set of frequency resources for the first group of resources and the second group of
8 resources.

1 36. The non-transitory computer-readable medium of claim 28, wherein
2 the demodulation reference signal of the first downlink shared channel transmission is used
3 for channel estimation for all allocated frequency resource blocks of the second TTI.