CLAIMS

1. A method of wireless communication in a mobile device, comprising: receiving a control signal having a first bandwidth; and receiving a data signal having a second bandwidth wider than the first bandwidth, wherein the control signal and the data signal are received over a single carrier frequency, wherein the control signal comprises an indication of a characteristic of the data signal, wherein the data signal is transmitted after the control signal such that the data signal and control signal are separated by a time interval, and wherein the time interval is based on a switching latency of the mobile device.

2. The method of claim 1, wherein the indication indicates that the second bandwidth completely occupies an available bandwidth.

3. The method of claim 1, wherein the indication indicates that the second bandwidth occupies only a portion of an available bandwidth.

4. The method of claim 1, further comprising switching from the first bandwidth to the second bandwidth after receiving the control signal and switching from the second bandwidth to the first bandwidth after receiving the data signal.

5. The method of claim 1, further comprising receiving a second data signal using a third bandwidth over the single carrier frequency, wherein the third bandwidth is wider than the first bandwidth and different than the second bandwidth.

6. The method of claim 1, further comprising adjusting a radio frequency (RF) front end of the mobile device to receive using the second bandwidth.

7. The method of claim 1, further comprising, in response to receiving the control signal, adjusting a radio frequency (RF) front end of the mobile device to receive using the second bandwidth.

8. The method of claim 1, wherein the characteristic is the second bandwidth, and wherein the method further comprises, in response to the indication of the second bandwidth, adjusting a radio frequency (RF) front end of the mobile device to receive using the second bandwidth.

9. The method of claim 1, further comprising: transmitting a capability message, wherein the capability message comprises a dynamic bandwidth switching capability indication of the mobile device; and receiving a response message comprising an indication that dynamic bandwidth switching is activated.

10. The method of claim 9, wherein the capability message further comprises an indication of switching latency of the mobile device, wherein the response message further comprises an indication of the time interval between the control signal and the data signal, wherein the time interval is based on the indication of switching latency, and wherein the method further comprises: adjusting a radio frequency (RF) front end of the mobile device, during the time interval, to receive using the second bandwidth.

11. The method of claim 10, wherein the response message or the control signal further comprises a control signal switching indication, wherein the method further comprises: in response to the control signal switching indication, maintaining the RF front end to receive using the second bandwidth immediately after receiving the data signal; and receiving a second control signal using the second bandwidth immediately after the data signal.

12. The method of claim 11, wherein the second control signal indicates that there is no subsequent data signal prior to a third control signal, and wherein the method further comprises receiving the third control signal using the first bandwidth.

13. The method of claim 11, wherein the second control signal indicates that there is a subsequent data signal, and wherein the method further comprises receiving the subsequent data signal using the second bandwidth.

14. The method of claim 1, further comprising receiving a second data signal using a third bandwidth over a second single carrier frequency, wherein the third bandwidth is wider than the first bandwidth and different than the second bandwidth, and wherein the single carrier frequency and the second single carrier frequency are different.

15. The method of claim 1, wherein the control signal and the data signal are in a same transmission time interval (TTI).

16. The method of claim 1, wherein the control signal and the data signal are in a different transmission time interval (TTI).

17. The method of claim 1, further comprising receiving a second control signal using the second bandwidth, wherein the second control signal indicates that there is no subsequent data signal in a transmission time interval (TTI), and wherein the indication resets a counter to a maximum value, wherein the counter is decremented for each subsequent consecutive TTI that does not include data, wherein bandwidth is maintained at the second bandwidth until the counter reaches zero, and wherein the receiver is transitioned to the first bandwidth when the counter reaches zero.

18. The method of claim 17, wherein the second bandwidth occupies only a portion of an available bandwidth.

19. The method of claim 17, wherein in response to the second control signal indicating that there is no subsequent data signal, turning off a portion of a radio frequency front end of the mobile device during a portion of the time interval between the second control signal and a third control signal.

20. A computer program product for wireless communications, comprising: a non-transitory computer-readable medium having program code recorded thereon, the program code including: code for causing a receiver to receive a control signal having a first bandwidth; and code for causing the receiver to receive a data signal having a second bandwidth wider than the first bandwidth, wherein the control signal and the data signal are received over a single carrier frequency, wherein the control signal comprises an indication of a characteristic of the data signal, wherein the data signal is transmitted after the control signal such that the data signal and control signal are separated by a time interval, and wherein the time interval is based on a switching latency of the receiver.

21. The computer program product of claim 20, wherein the indication indicates that the second bandwidth completely occupies an available bandwidth.

22. The computer program product of claim 20, wherein the indication indicates that the second bandwidth occupies only a portion of an available bandwidth.

23. The computer program product of claim 20, further comprising: code for causing the receiver to switch from the first bandwidth to the second bandwidth after receiving the control signal; and code for causing the receiver to switch from the second bandwidth to the first bandwidth after receiving the data signal.

24. The computer program product of claim 20, further comprising code for causing the receiver to receive a second data signal using a third bandwidth over the single carrier frequency, wherein the third bandwidth is wider than the first bandwidth and different than the second bandwidth.

25. The computer program product of claim 20, wherein the receiver comprises a radio frequency (RF) front end, and wherein the computer program product further comprises code for adjusting the RF front end to receive using the second bandwidth.

26. The computer program product of claim 20, wherein the receiver comprises a radio frequency (RF) front end, and wherein the computer program product further comprises code for, in response to receiving the control signal, adjusting the RF front end to receive using the second bandwidth.

27. The computer program product of claim 20, wherein the receiver comprises a radio frequency (RF) front end, wherein the characteristic is the second bandwidth, and wherein the computer program product further comprises code for, in response to the indication of the second bandwidth, adjusting the RF front end to receive using the second bandwidth.

28. The computer program product of claim 20, further comprising: code for causing a transmitter to transmit a capability message, wherein the capability message comprises a dynamic bandwidth switching capability indication of a mobile device; and code for causing the receiver to receive a response message comprising an indication that dynamic bandwidth switching is activated.

29. The computer program product of claim 28, wherein the capability message further comprises an indication of switching latency of the mobile device, wherein the response message further comprises an indication of the time interval between the control signal and the data signal, wherein the time interval is based on the indication of switching latency, wherein the receiver comprises a radio frequency (RF) front end, and wherein the computer program product further comprises: code for causing the RF front end, during the time interval, to adjust to receive using the second bandwidth.

30. The computer program product of claim 29, wherein the response message or the control signal further comprises a control signal switching indication, wherein the computer program product further comprises: code for, in response to the control signal switching indication, maintaining the RF front end to receive using the second bandwidth immediately after receiving the data signal; and code for causing the receiver to receive a second control signal using the second bandwidth immediately after the data signal.

31. The computer program product of claim 30, wherein the second control signal indicates that there is no subsequent data signal prior to a third control signal, and wherein the computer program product further comprises code for causing the receiver to receive the third control signal using the first bandwidth.

32. The computer program product of claim 30, wherein the second control signal indicates that there is a subsequent data signal, and wherein the computer program product further comprises code for causing the receiver to receive the subsequent data signal using the second bandwidth.

33. A mobile device comprising: an adjustable radio-frequency (RF) front end configured to: receive a control signal having a first bandwidth; and receive a data signal having a second bandwidth wider than the first bandwidth, wherein the control signal and the data signal are received over a single carrier frequency, wherein the control signal comprises an indication of a characteristic of the data signal, wherein the data signal is transmitted after the control signal such that the data signal and control signal are separated by a time interval, and wherein the time interval is based on a switching latency of at least the adjustable RF front end.

34. The mobile device of claim 33, wherein the adjustable RF front end comprises: an amplifier, an analog-to-digital converter (ADC); and an analog filter coupled between the amplifier and the ADC, wherein the amplifier, the analog filter, and the ADC are configured to: receive first command signals from a control processor to adjust to receive the control signal having the first bandwidth; and receive second command signals from the control processor to adjust to receive the data signal having the second bandwidth.

35. The mobile device of claim 34, wherein the amplifier, the analog filter, and the ADC are further configured to adjust to receive the data signal during the time interval.

36. The mobile device of claim 34, wherein the indication indicates that the second bandwidth completely occupies an available bandwidth.

37. The mobile device of claim 34, wherein the indication indicates that the second bandwidth occupies only a portion of an available bandwidth.

38. The mobile device of claim 34, wherein the control signal and the data signal are in a same transmission time interval (TTI).

39. The mobile device of claim 34, wherein the control signal and the data signal are in a different transmission time interval (TTI).

40. The mobile device of claim 39, wherein the amplifier, the analog filter, and the ADC are further configured to receive third command signals from a control processor to adjust to receive a second control signal, wherein the second control signal indicates that there is no subsequent data signal in a transmission time interval (TI), wherein in response to the indication a counter is reset to a maximum value, wherein the counter is decremented for each subsequent consecutive TTI that does not include data, wherein bandwidth is maintained at the second bandwidth until the counter reaches zero, and wherein the RF front end is transitioned to the first bandwidth when the counter reaches zero.

41. The mobile device of claim 39, wherein the second bandwidth occupies only a portion of an available bandwidth.

42. The mobile device of claim 39, wherein the amplifier, the analog filter, and the ADC are further configured to receive third command signals from the control processor to adjust to receive a second control signal, wherein the second control signal indicates that there is no subsequent data signal in a transmission time interval (TTI), wherein in response to the second control signal indicating that there is no subsequent data signal, at least one of the amplifier, the analog filter, and the ADC is configured to be turned off during a portion of the TTI.

43. A wireless communications apparatus comprising: an amplifier, an analog-to-digital converter (ADC); an analog filter coupled between the amplifier and the ADC; and a control processor coupled to the amplifier, the ADC, and the analog filter, wherein the control processor is configured to: transmit a capability message indicating at least a switching latency of the wireless communication apparatus; in response to receiving control information from control signal having a first bandwidth: set a bandwidth of the amplifier and the ADC to a second bandwidth wider than the first bandwidth; and set a sampling rate of the ADC according to the second bandwidth, wherein the switching latency is associated with the setting the bandwidth of the amplifier and the ADC to the second bandwidth and the setting the sampling rate of the ADC according to the second bandwidth.

44. The wireless communications apparatus of claim 43, wherein the control information provides an indication of a characteristic of a data signal.

45. The wireless communications apparatus of claim 44, wherein the indication indicates that the second bandwidth completely occupies an available bandwidth.

46. The wireless communications apparatus of claim 44, wherein the indication indicates that the second bandwidth occupies only a portion of an available bandwidth.

47. A wireless communication apparatus comprising: a control processor configured to: couple to a radio frequency (RF) front end: transmit, via the RF front end, a capability message indicating at least a switching latency of the RF frontend; adjust the RF front end to receive a control signal having a first bandwidth; and adjust the RF front end to receive a data signal having a second bandwidth wider than the first bandwidth, wherein the control signal and the data signal are received over a single carrier frequency, and wherein the switching latency is associated with the adjusting the RF front end to receive the data signal having the second bandwidth.

48. The wireless communication apparatus of claim 47, wherein the control processor is further configured to: couple to a baseband processor, and receive control information from the baseband processor obtained from the control signal, wherein adjusting the RF front end to receive the data signal is in response to the control information.

49. The wireless communication apparatus of claim 48, wherein the control information provides an indication of the second bandwidth.