CLAIMS

1. A method of wireless communication performed by an apparatus of a user equipment (UE), comprising:

determining a first transmit power for transmission of a preamble of a random access message based at least in part on one or more carriers,

wherein the one or more carriers are to transmit the preamble or a payload of the random access message, and

wherein a priority of one or more of the preamble or the payload is associated with the one or more carriers;

determining a second transmit power for transmission of the payload associated with the one or more carriers,

wherein the payload includes a physical uplink shared channel (PUSCH) communication, and

wherein the random access message includes both the preamble and the payload;

transmitting the preamble using the first transmit power; and

transmitting the payload using the second transmit power,

wherein the first transmit power and the second transmit power are associated with a transmission prioritization used to accommodate a power constraint, and

wherein transmitting the preamble using the first transmit power is prioritized over other uplink transmissions that overlap with the preamble.

2. The method of claim 1, wherein the first transmit power is determined based at least in part on a first set of parameters,

wherein the second transmit power is determined based at least in part on a second set of parameters, and

wherein the first set of parameters is different from the second set of parameters.

3. The method of claim 2, wherein the first set of parameters includes at least one of:

a transmission occasion in which the preamble is to be transmitted,

a pathloss measurement for a carrier to be used to transmit the preamble,

a transmission bandwidth assigned for transmission of the preamble,

a power spectral density target for transmission of the preamble, or

a pathloss compensation factor for transmission of the preamble.

4. The method of claim 2, wherein the second set of parameters includes at least one of:

a transmission occasion in which the payload is to be transmitted,

a pathloss measurement for a carrier to be used to transmit the payload,

a transmission bandwidth assigned for transmission of the payload,

a power spectral density target for transmission of the payload, or

a pathloss compensation factor for transmission of the payload.

5. The method of claim 1, wherein at least one of the first transmit power or the second transmit power is prioritized over a transmit power used for the other uplink transmissions,

wherein the other uplink transmission overlap with the preamble or the payload.

6. The method of claim 5, wherein the other uplink transmissions include a physical uplink control channel (PUCCH) communication.

7. The method of claim 5, wherein the other uplink transmissions include a PUSCH transmission.

8. An apparatus for wireless communication, comprising:

a memory; and

one or more processors coupled to the memory, the one or more processors configured to:

determine a first transmit power for transmission of a preamble of a random access message based at least in part on one or more carriers,

wherein the one or more carriers are to transmit the preamble or a payload of the random access message, and

wherein a priority of one or more of the preamble or the payload is associated with the one or more carriers;

determine a second transmit power for transmission of the payload associated with the one or more carriers,

wherein the payload includes a physical uplink shared channel (PUSCH) communication, and

wherein the random access message includes both the preamble and the payload;

transmit the preamble using the first transmit power; and

transmit the payload using the second transmit power,

wherein the first transmit power and the second transmit power are associated with a transmission prioritization used to accommodate a power constraint, and

wherein transmitting the preamble using the first transmit power is prioritized over other uplink transmission that overlap with the preamble.

9. The apparatus of claim 8, wherein the first transmit power is determined based at least in part on a first set of parameters,

wherein the second transmit power is determined based at least in part on a second set of parameters, and

wherein the first set of parameters is different from the second set of parameters.

10. The apparatus of claim 9, wherein the first set of parameters includes at least one of:

a transmission occasion in which the preamble is to be transmitted,

a pathloss measurement for a carrier to be used to transmit the preamble,

a transmission bandwidth assigned for transmission of the preamble,

a power spectral density target for transmission of the preamble, or

a pathloss compensation factor for transmission of the preamble.

11. The apparatus of claim 9, wherein the second set of parameters includes at least one of:

a transmission occasion in which the payload is to be transmitted,

a pathloss measurement for a carrier to be used to transmit the payload,

a transmission bandwidth assigned for transmission of the payload,

a power spectral density target for transmission of the payload, or

a pathloss compensation factor for transmission of the payload.

12. The apparatus of claim 8, wherein at least one of the first transmit power or the second transmit power is prioritized over a transmit power used for the other uplink transmissions,

wherein the other uplink transmissions overlap with the preamble or the payload.

13. The apparatus of claim 12, wherein the other uplink transmissions include a physical uplink control channel (PUCCH) communication.

14. The apparatus of claim 12, wherein the other uplink transmissions include a PUSCH transmission.

15. A method of wireless communication performed by an apparatus of a user equipment (UE), comprising:

determining a first transmit power for transmission of a preamble of a random access message based at least in part on a first set of parameters, wherein the first set of parameters, associated with the determining the first transmit power for transmission of the preamble, includes a carrier to transmit the preamble and a payload of the random access message;

determining a second transmit power for transmission of the payload associated with a second set of parameters,

wherein the random access message includes both the preamble and the payload, and

wherein the second set of parameters, associated with the determining the second transmit power for transmission of the payload, includes the carrier;

transmitting the preamble using the first transmit power; and

transmitting the payload using the second transmit power, wherein at least one of the first transmit power or the second transmit power is prioritized over a transmit power used for other uplink transmissions that overlap with the preamble or the payload.

16. The method of claim 15, wherein the first set of parameters is different from the second set of parameters.

17. The method of claim 15, wherein the first set of parameters further includes at least one of:

a transmission occasion in which the preamble is to be transmitted,

a pathloss measurement for the carrier,

a transmission bandwidth assigned for transmission of the preamble,

a power spectral density target for transmission of the preamble, or

a pathloss compensation factor for transmission of the preamble.

18. The method of claim 15, wherein the second set of parameters further includes at least one of:

a transmission occasion in which the payload is to be transmitted,

a pathloss measurement for the carrier,

a transmission bandwidth assigned for transmission of the payload,

a power spectral density target for transmission of the payload, or

a pathloss compensation factor for transmission of the payload.

19. An apparatus for wireless communication, comprising:

a memory; and

one or more processors coupled to the memory, the one or more processors configured to:

determine a first transmit power for transmission of a preamble of a random access message based at least in part on a first set of parameters,

wherein the first set of parameters, associated with the determining the first transmit power for transmission of the preamble, includes a carrier to transmit the preamble and a payload of the random access message;

determine a second transmit power for transmission of the payload associated with a second set of parameters,

wherein the random access message includes both the preamble and the payload, and

wherein the second set of parameters, associated with the determining the second transmit power for transmission of the payload, includes the carrier;

transmit the preamble using the first transmit power; and

transmit the payload using the second transmit power, wherein at least one of the first transmit power or the second transmit power is prioritized over a transmit power used for other uplink transmissions that overlap with the preamble or the payload.

20. The apparatus of claim 19, wherein the first set of parameters is different from the second set of parameters.

21. The apparatus of claim 19, wherein the first set of parameters further includes at least one of:

a transmission occasion in which the preamble is to be transmitted,

a pathloss measurement for the carrier,

a transmission bandwidth assigned for transmission of the preamble,

a power spectral density target for transmission of the preamble, or

a pathloss compensation factor for transmission of the preamble.

22. The apparatus of claim 19, wherein the second set of parameters further includes at least one of:

a transmission occasion in which the payload is to be transmitted,

a pathloss measurement for the carrier,

a transmission bandwidth assigned for transmission of the payload,

a power spectral density target for transmission of the payload, or

a pathloss compensation factor for transmission of the payload.

23. The apparatus of claim 19, wherein the other uplink transmissions include a sounding reference signal (SRS).

24. The apparatus of claim 19, wherein the random access message is a first message of a two-step random access procedure,

wherein the first set of parameters further includes an index of transmission occasion for the first message of the two-step random access procedure, and

wherein the second set of parameters further includes the index of transmission occasion for the first message of the two-step random access procedure.

25. The apparatus of claim 8, wherein the random access message is a first message of a two-step random access procedure that includes both the preamble and the payload.

26. The apparatus of claim 19, wherein the first transmit power and the second transmit power are associated with a transmission prioritization used to accommodate a power constraint when the apparatus is operating in a supplemental uplink mode.

27. The method of claim 1, wherein the preamble and the payload are transmitted using a same carrier.

28. The apparatus of claim 8, wherein the preamble and the payload are transmitted using a same carrier.