CLAIMS

1. A method for wireless communication performed by a user equipment, UE (615), comprising:
identifying (1505) a first carrier and a second carrier that are scheduled for a transmission in a transmission time interval, TTI, the first carrier using a dedicated radio frequency spectrum band and the second carrier using a shared radio frequency spectrum band;
performing (1510) a listen before talk, LBT, procedure to determine availability of the second carrier for transmissions during the TTI;
prioritizing the first carrier and second carrier for power allocation based at least in part on a payload of the control information; and
allocating (1515) a total transmission power for the TTI across the first carrier and the second carrier based at least in part on a type of control channel for transmission of control information during the TTI, an outcome of the LBT procedure, a timing of the LBT procedure relative to the TTI, one or more other transmissions to be transmitted during the TTI, or any combination thereof.

2. The method of claim 1, wherein the TTI comprises a plurality of subframes, the second carrier is scheduled for transmissions in a first subframe and a second subframe that is after the first subframe, and the first carrier is scheduled for transmission in the second subframe, and wherein the allocating further comprises:
prioritizing the second carrier to provide a first portion of the total transmission power to the second carrier irrespective of the scheduled transmission on the first carrier; and
allocating a difference between the total transmission power and the first portion of the total transmission power to the first carrier.

3. The method of claim 1, wherein the TTI comprises a plurality of subframes, the second carrier is scheduled for transmissions in each of the plurality of subframes, and the first carrier is scheduled for transmission in a second subframe that is after a first subframe, and wherein the allocating further comprises:
determining a first portion of the total transmission power to be allocated to the second carrier irrespective of the scheduled transmission of the first carrier;
reducing the first portion of the total transmission power based at least in part on a parameter associated with a transmission using the second carrier;

allocating the reduced first portion of the total transmission power to the second carrier for each of the plurality of subframes; and

allocating a difference between the total transmission power and the reduced first portion of the total transmission power to the first carrier.

4. The method of claim 1, wherein the TTI comprises a plurality of subframes, the second carrier is scheduled for transmissions in a first subframe and a second subframe that is after the first subframe, and the first carrier is scheduled for transmission in the second subframe, and wherein the allocating further comprises:

determining whether the second carrier is scheduled for transmission in a third subframe of the plurality of subframes after the second subframe;

dropping the first carrier in the second subframe; and

allocating the total transmission power to the second carrier.

5. The method of claim 1, wherein the TTI comprises a plurality of subframes, the second carrier is scheduled for transmissions in each of the plurality of subframes, and the first carrier is scheduled for transmission in a second subframe that is after a first subframe, and wherein the allocating further comprises:

determining that control information and shared channel information is scheduled to be transmitted on the first carrier during the second subframe;

diverting a portion of the total transmission power to the first carrier;

transmitting the control information using the first carrier; and

dropping the shared channel information scheduled to be transmitted on the first carrier.

6. The method of claim 1, wherein the TTI comprises a plurality of subframes, the second carrier is scheduled for transmissions in each of the plurality of subframes, and the first carrier is scheduled for transmission in a second subframe that is after a first subframe, and wherein the allocating further comprises:

determining that control information and shared channel information is scheduled to be transmitted on the first carrier during the second subframe and that only shared channel information is scheduled to be transmitted on the second carrier during the second subframe;

diverting a first portion of the total transmission power to the first carrier;

allocating a difference between the total transmission power and the first portion of the total transmission power to the second carrier;
transmitting the control information and shared channel information using the first carrier; and
transmitting shared channel information scheduled to be transmitted on the second carrier.

7. The method of claim 6, wherein a ratio of the total transmission power to divert is based at least in part on whether channel state information, CSI, is to be transmitted using the second carrier.

8. The method of claim 1, wherein the TTI comprises a plurality of subframes and each of the first carrier and the second carrier are scheduled for transmissions in a first subframe immediately following completion of the LBT procedure, and wherein the allocating further comprises:
pre-allocating, prior to performing the LBT procedure, a first portion of the total transmission power to the first carrier and a difference between the total transmission power and the first portion of the total transmission power to the second carrier.

9. The method of claim 8, wherein a ratio between the first portion and the total transmission power is determined based at least in part on whether control channel information scheduled on one or more of the first carrier or second carrier, or whether channel state information, CSI, is to be transmitted using a physical uplink shared channel, PUSCH.

10. The method of claim 8, further comprising:
transmitting a first portion of a first subframe following the LBT procedure using the pre-allocated transmission powers;
reallocating the total transmission power for the TTI across the first carrier and the second carrier based at least in part on the outcome of the LBT procedure; and
transmitting a remaining portion of the first subframe using the reallocated transmission powers.

11. The method of claim 1, wherein the TTI comprises a plurality of subframes and each of the first carrier and the second carrier are scheduled for transmissions in a first

subframe and the LBT procedure is completed during the first subframe, and wherein the allocating further comprises:
pre-allocating, prior to performing the LBT procedure, a first portion of the total transmission power to the first carrier and a difference between the total transmission power and the first portion of the total transmission power to the second carrier; and
transmitting on the first carrier during an entirety of the first subframe using the first portion of the total transmission power regardless of the outcome of the LBT procedure.

12. The method of claim 1, wherein allocating the total transmission power for the TTI across the first carrier and the second carrier is further based on whether the first carrier is associated with a primary cell or a primary secondary cell.

13. A user equipment, UE (615), for wireless communication, comprising:
means for identifying a first carrier and a second carrier that are scheduled for a transmission in a transmission time interval, TTI, the first carrier using a dedicated radio frequency spectrum band and the second carrier using a shared radio frequency spectrum band;
means for performing a listen before talk, LBT, procedure to determine availability of the second carrier for transmissions during the TTI;
means for prioritizing the first carrier and second carrier for power allocation based at least in part on a payload of the control information; and
means for allocating a total transmission power for the TTI across the first carrier and the second carrier based at least in part on a type of control channel for transmission of control information during the TTI, an outcome of the LBT procedure, a timing of the LBT procedure relative to the TTI, one or more other transmissions to be transmitted during the TTI, or any combination thereof.

14. A computer readable medium storing code for wireless communication, the code comprising instructions, which when executed by a user equipment (615), cause the UE (615) to perform a method according to any of claims 1 to 12.