

WHAT IS CLAIMED IS:

1. A method of wireless communication, comprising:
receiving, by a base station, a symbol in an uplink communication, wherein the uplink communication uses a two-tone modulation scheme and is associated with a resource allocation at sub physical resource block granularity;
determining, by the base station, a phase rotation for the symbol associated with the uplink communication, wherein the phase rotation is determined based at least in part on a tone index associated with the resource allocation; and
applying, by the base station, the phase rotation to the symbol.
2. The method of claim 1, wherein the two-tone modulation scheme uses $\pi/2$ binary phase shift keying (BPSK) modulation.
3. The method of claim 1, wherein the tone index is a reference tone index, associated with the resource allocation, and wherein the reference tone index is the same for multiple symbols.
4. The method of claim 3, wherein the reference tone index matches a tone index of one of three tones associated with the resource allocation.
5. The method of claim 3, wherein the reference tone index is based at least in part on two tones associated with the resource allocation.
6. The method of claim 5, wherein the reference tone index is based at least in part on a midpoint between the two tones associated with the resource allocation.
7. The method of claim 1, wherein the tone index is a tone index of a tone in which the symbol is received.
8. The method of claim 7, wherein the phase rotation is reset at a start of a subframe or a start of a slot.
9. A method of wireless communication, comprising:

determining, by a user equipment, a phase rotation for a symbol associated with an uplink communication, wherein the uplink communication is to use a two-tone modulation scheme and is associated with a resource allocation at sub physical resource block granularity,

and wherein the phase rotation is determined based at least in part on a tone index associated with the resource allocation;

applying, by the user equipment, the phase rotation to the symbol associated with the uplink communication; and

transmitting, by the user equipment, the symbol associated with the uplink communication.

10. The method of claim 9, wherein the two-tone modulation scheme uses $\pi/2$ binary phase shift keying (BPSK) modulation.

11. The method of claim 9, wherein the tone index is a reference tone index, associated with the resource allocation, wherein the reference tone index is the same for multiple symbols.

12. The method of claim 11, wherein the reference tone index matches a tone index of one of three tones associated with the resource allocation.

13. The method of claim 11, wherein the reference tone index is based at least in part on two tones associated with the resource allocation.

14. The method of claim 13, wherein the reference tone index is based at least in part on a midpoint between the two tones associated with the resource allocation.

15. The method of claim 9, wherein the tone index is a tone index of the tone in which the symbol is to be transmitted.

16. The method of claim 15, wherein the phase rotation is reset at a start of a subframe or a start of a slot.

17. A wireless communication device for wireless communication, comprising:

memory; and

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

determine a phase rotation for a symbol associated with an uplink communication, wherein the uplink communication uses a two-tone modulation scheme and is associated with a resource allocation at sub physical resource block granularity, and wherein the phase rotation is determined based at least in part on a tone index associated with the resource allocation;

apply the phase rotation to the symbol associated with the uplink communication; and
transmit the symbol associated with the uplink communication.

18. The wireless communication device of claim 17, wherein the two-tone modulation scheme uses $\pi/2$ binary phase shift keying (BPSK) modulation.
19. The wireless communication device of claim 17, wherein the tone index is a reference tone index, associated with the resource allocation, wherein the reference tone index is the same for multiple symbols.
20. The wireless communication device of claim 19, wherein the reference tone index matches a tone index of one of three tones associated with the resource allocation.
21. The wireless communication device of claim 19, wherein the reference tone index is based at least in part on two tones associated with the resource allocation.
22. The wireless communication device of claim 21, wherein the reference tone index is based at least in part on a midpoint between the two tones associated with the resource allocation.
23. The wireless communication device of claim 17, wherein the tone index is a tone index of the tone in which the symbol is communicated.
24. The wireless communication device of claim 23, wherein the phase rotation is reset at a start of a subframe or a start of a slot.
25. A method of wireless communication, comprising:
generating, by a user equipment (UE), a one-tone demodulation reference signal based at least in part on one or more sequences, wherein the UE is to transmit the one-tone demodulation reference signal based at least in part on a resource allocation at sub physical resource block granularity and a two-tone modulation scheme; and
transmitting, by the UE, the one-tone demodulation reference signal using a single tone associated with the resource allocation.
26. The method of claim 25, wherein the two-tone modulation scheme uses $\pi/2$ binary phase shift keying (BPSK) modulation.

27. The method of claim 25, wherein the single tone is one of three tones associated with the resource allocation.

28. The method of claim 25, wherein the one or more sequences include a first sequence and a second sequence.

29. The method of claim 28, wherein the one-tone demodulation reference signal is generated based at least in part on a composite of the first sequence and the second sequence.

30. The method of claim 28, wherein the first sequence is a Hadamard code and the second sequence is a binary sequence.