

Claims

1. A method of performing transmit power control (TPC) of a wireless transmitter/receiver unit (WTRU) comprising:

receiving downlink control information including both uplink scheduling information and TPC information, wherein the uplink scheduling information includes modulation and coding set (MCS) information;

determining a transmit power level for a physical uplink channel, based on at least a measured pathloss, wherein the determined transmit power level is adjusted in response to the TPC information and the MCS information,

wherein the determined transmit power level is further based on a weighting factor, α ,

where α has a value from 0 to 1; and

is multiplied to the measured pathloss;

and transmitting on the physical uplink channel based on the scheduling information and the determined transmit power level.

2. A method according to claim 1, wherein the physical uplink channel is a physical uplink shared channel (PUSCH).

3. A method according to claim 2, wherein the determined transmit power level is further based on a modulation and coding set (MCS) factor associated with an MCS of the physical uplink shared channel transmission.

4. A method according to claim 1, wherein the determined transmit power control factor is based at least in part on a closed loop power control factor.

5. A method according to claim 1, wherein the determined transmit power level is based on a maximum transmit power level.

6. A method according to claim 1, wherein the physical uplink channel is a physical uplink control channel (PUCCH).

7. A method according to claim 6, wherein the determined transmit power level is further based on a quality factor associated with channel quality indication (CQI) information of the PUCCH.

8. A wireless transmitter/receiver unit (WTRU) comprising:

a receiver configured to receive downlink control information including both uplink scheduling information and transmit power control (TPC) information, wherein the uplink scheduling information includes modulation and coding set (MCS) information;

a processor configured to determine a transmit power level for a physical uplink channel, based on at least a measured pathloss, wherein the determined transmit power level is adjusted in response to the TPC information, the MCS information and wherein the determined transmit power level is further based on a weighting factor, α ,

where α has a value from 0 to 1; and

is multiplied to the measured pathloss; and

a transmitter operably coupled to the processor, the transmitter configured to transmit on the physical uplink channel based on the scheduling information and the determined transmit power level.

9. A WTRU according to claim 8, wherein the physical uplink channel is a physical uplink shared channel (PUSCH).

10. A WTRU according to claim 9, wherein the determined transmit power level is further based on a modulation and coding set (MCS) factor associated with an MCS of the physical uplink shared channel transmission.

11. A WTRU according to claim 8, wherein the determined transmit power level is based at least in part on a closed loop power control factor.

12. A WTRU according to claim 8, wherein the determined transmit power level is based on a maximum transmit power level.

13. A WTRU according to claim 8, wherein the physical uplink channel is a physical uplink control channel (PUCCH) and the determined transmit power level is further based on a quality factor associated with channel quality indication (CQI) information of the PUCCH.

Claims

1. A wireless transmit/receive unit (WTRU) comprising:
circuitry configured to receive a downlink control message, the message including modulation and uplink scheduling information, including coding set (MCS) information and transmit power control (TPC) information;
the circuitry further configured to measure pathloss based on a received signal;
the circuitry further configured to determine a transmit power level for a physical uplink channel based on the measured pathloss, the TPC information, the MCS information, and a predetermined weighting factor; and
the circuitry further configured to output a signal based on the uplink scheduling information and the determined transmit power level for transmission on a physical uplink channel.
2. The WTRU of claim 1, wherein the predetermined weighting factor has a value from 0 to 1.
3. The WTRU of claim 1, wherein the predetermined weighting factor is multiplied to the measured pathloss.
4. The WTRU according to claim 1, wherein the physical uplink channel is a physical uplink shared channel (PUSCH).
5. The WTRU according to claim 1, wherein the determined transmit power level is based on a closed loop power control factor.
6. The WTRU according to claim 1, wherein the determined transmit power level is based on a maximum transmit power level.
7. The WTRU according to claim 1, wherein the physical uplink channel is a physical uplink control channel (PUCCH) and the determined transmit power level is further based on a quality factor associated with channel quality indicator (CQI) information of the PUCCH.
8. A method, implemented in a wireless transmit/receive unit (WTRU), the method comprising:

receiving a downlink control message, including modulation and uplink scheduling information, wherein the uplink scheduling information including coding set (MCS) information and transmit power control (TPC) information;

measuring pathloss based on a received signal;

determining a transmit power level for a physical uplink channel based on the measured pathloss, the TPC information, the MCS information, and a predetermined weighting factor; and

outputting a signal based on the uplink scheduling information and the determined transmit power level for transmission on a physical uplink channel.

9. The method of claim 8, wherein the predetermined weighting factor has a value from 0 to 1.

10. The method of claim 8, wherein the predetermined weighting factor is multiplied to the measured pathloss.

11. The method of claim 8, wherein the physical uplink channel is a physical uplink shared channel (PUSCH).

12. The method of claim 8, wherein the determined transmit power level is based on a closed loop power control factor.

13. The method of claim 8, wherein the determined transmit power level is based on a maximum transmit power level.

14. The method of claim 8, wherein the physical uplink channel is a physical uplink control channel (PUCCH) and the determined transmit power level is further based on a quality factor associated with channel quality indicator (CQI) information of the PUCCH.