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(12) **United States Patent**  
**Anderson**

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(54) **POWER CONTROL IN A WIRELESS COMMUNICATION SYSTEM**

USPC ..... 455/522, 68, 69, 296, 135, 226.3, 455/277.2, 115.3, 126, 127.1, 127.2, 67.11, 455/434, 436; 370/331, 320, 335, 342, 318, 370/392, 252, 276, 280; 375/147, 130  
See application file for complete search history.

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(57) **ABSTRACT**

Power control in a wireless network is disclosed. Transmit power control (TPC) commands may be accumulated by a user equipment (UE). If accumulation is enabled, the UE may receive on a single physical channel an allocation of a scheduled uplink resource and a TPC command. The TPC command may be accumulated with other received TPC commands. A transmit power for an uplink communication based on both the path loss and the accumulated TPC commands may then be calculated by the UE. If accumulation is not enabled, the UE may receive an allocation of a scheduled uplink resource to transmit data at a calculated power level.

**42 Claims, 4 Drawing Sheets**

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 891 days.

This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.**

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**H04W 72/04** (2009.01)  
**H04W 52/06** (2009.01)  
**H04W 52/24** (2009.01)  
**H04W 52/08** (2009.01)  
**H04W 52/10** (2009.01)  
**H04W 52/12** (2009.01)  
**H04W 52/22** (2009.01)

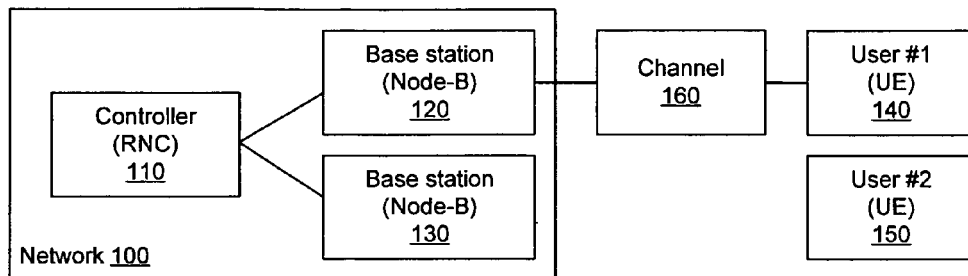
(52) **U.S. Cl.**

CPC ..... **H04W 72/0473** (2013.01); **H04W 52/06** (2013.01); **H04W 52/24** (2013.01); **H04W 52/08** (2013.01); **H04W 52/10** (2013.01); **H04W 52/12** (2013.01); **H04W 52/221** (2013.01); **H04W 52/242** (2013.01); **H04W 52/243** (2013.01)

USPC ..... **455/522**; 455/68; 455/69

(58) **Field of Classification Search**

CPC ..... H04W 72/0473; H04W 52/24; H04W 52/242; H04W 52/08; H04W 52/10; H04W 52/12; H04W 52/221; H04W 52/248



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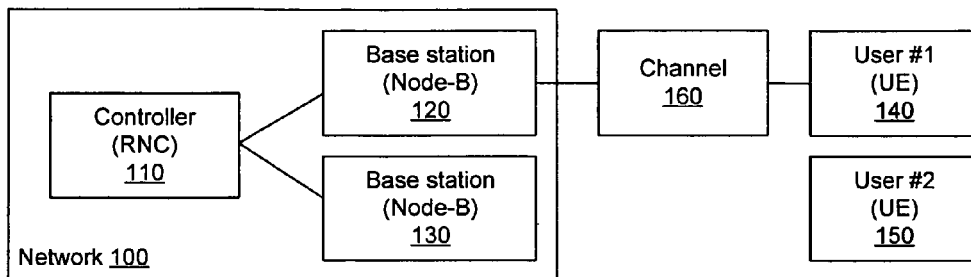


FIGURE 1

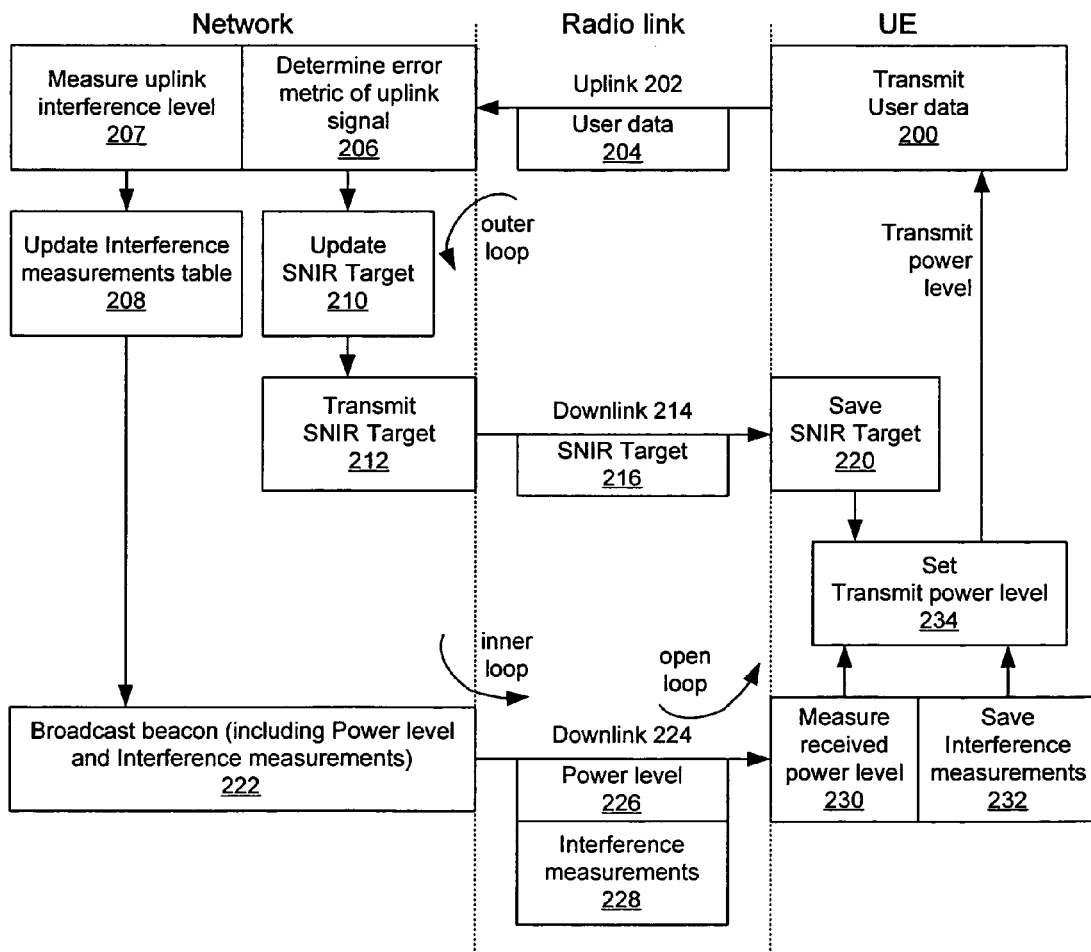


FIGURE 2

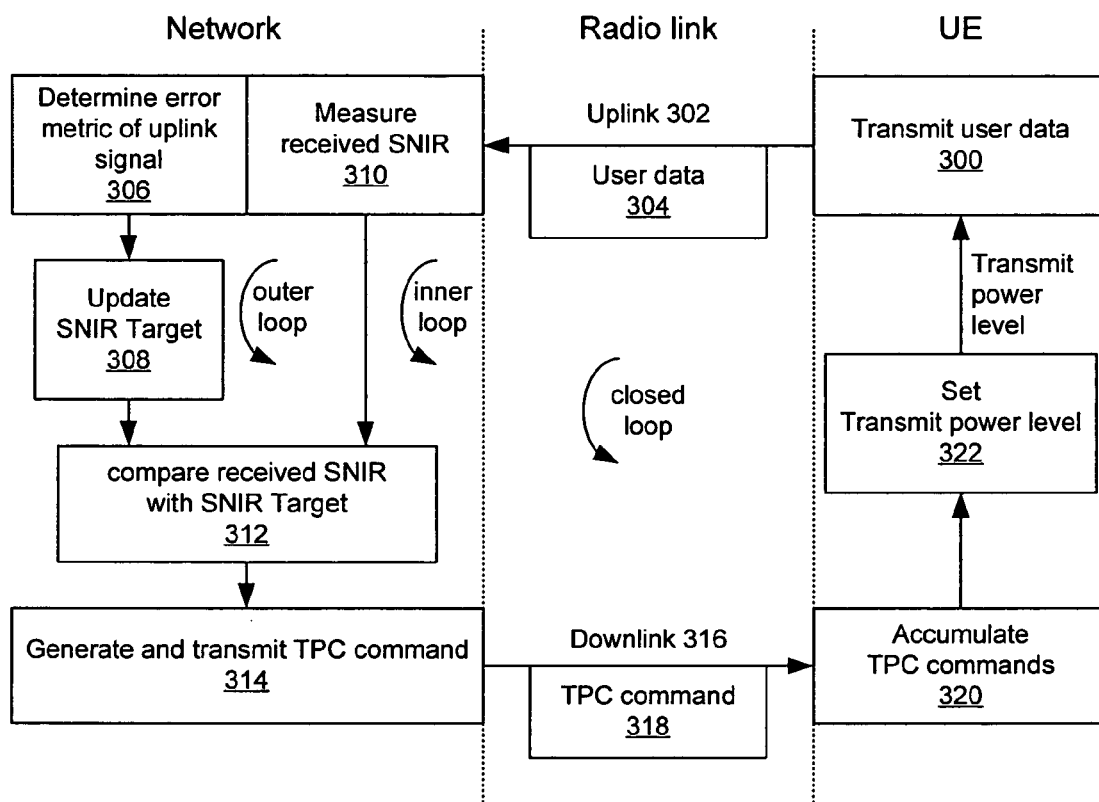


FIGURE 3

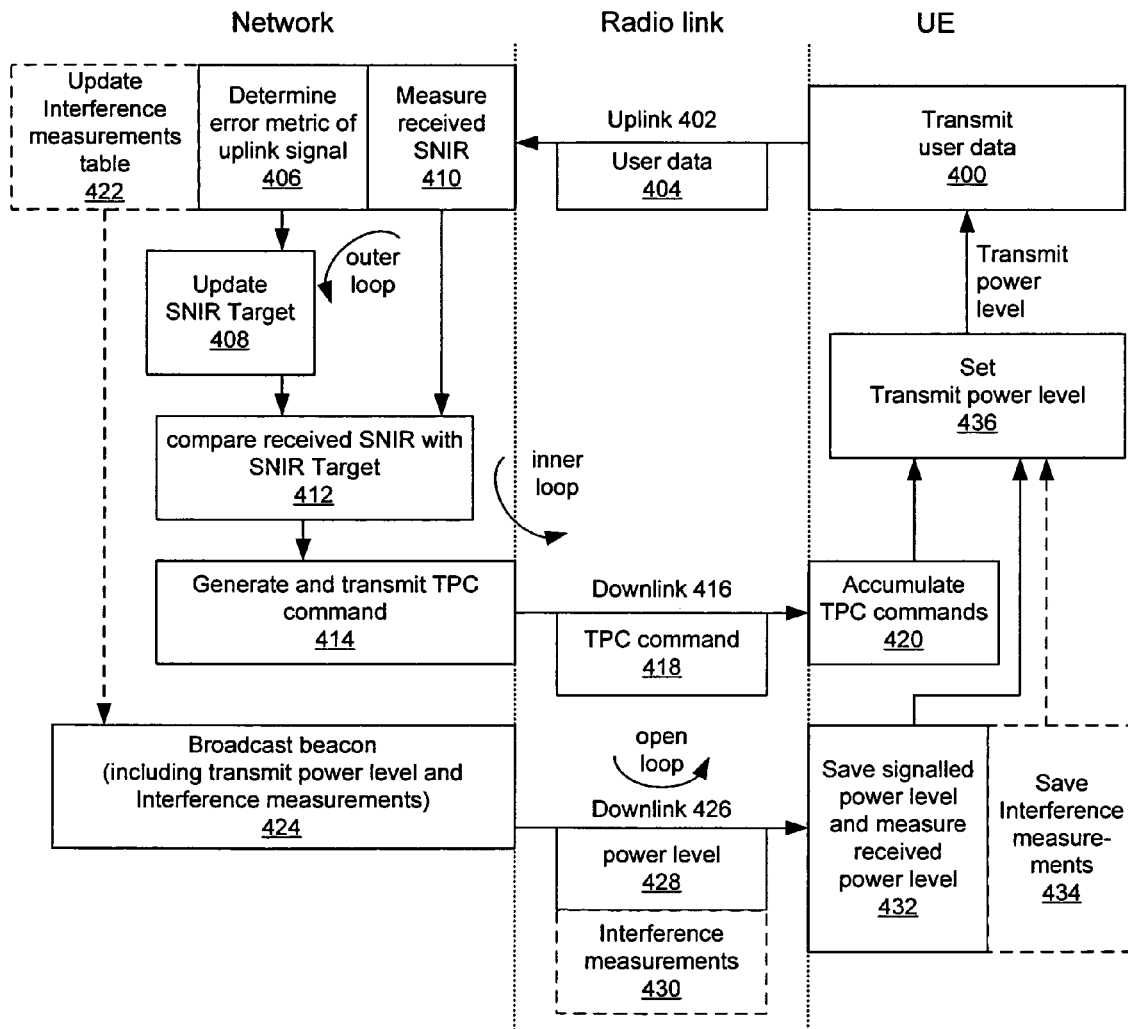


FIGURE 4

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