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United States Patent [19]

Tiedemann, Jr. et al.

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[45] Date of Patent: *Oct. 13, 1998

[54] **METHOD AND APPARATUS FOR CONTROLLING POWER IN A VARIABLE RATE COMMUNICATION SYSTEM**

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[73] Assignee: **Qualcomm Incorporated**, San Diego, Calif.

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,528,593.

[21] Appl. No.: **283,308**

[22] Filed: **Jul. 29, 1994**

[51] **Int. Cl.**[6] **H04Q 7/30**

[52] **U.S. Cl.** **370/391**; 455/403

[58] **Field of Search** 330/130, 134, 330/279; 455/69, 116, 38.3, 355, 33.1, 522, 403; 375/205, 285, 224, 259; 379/59, 60; 370/391

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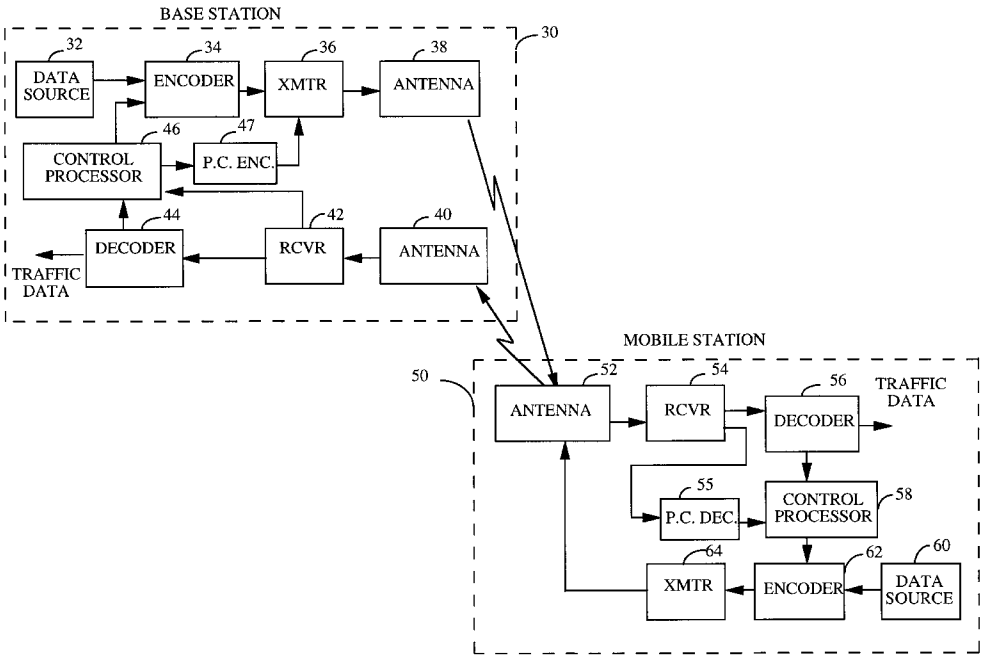
Primary Examiner—Wellington Chin
Assistant Examiner—Jean B. Corrielus
Attorney, Agent, or Firm—Russell B. Miller; Sean English

[57] **ABSTRACT**

A method and apparatus for controlling transmission power in a variable rate communication system is disclosed. The method disclosed provides for a closed loop power control method. A first remote station controls the transmission power of a second remote station by transmitting a rate dependent power control signal to the second remote communication station. Since only the second communication knows its transmission rate a priori, it must determine its course of action in accordance with both the received power control signal and the knowledge of its transmission rate.

65 Claims, 4 Drawing Sheets



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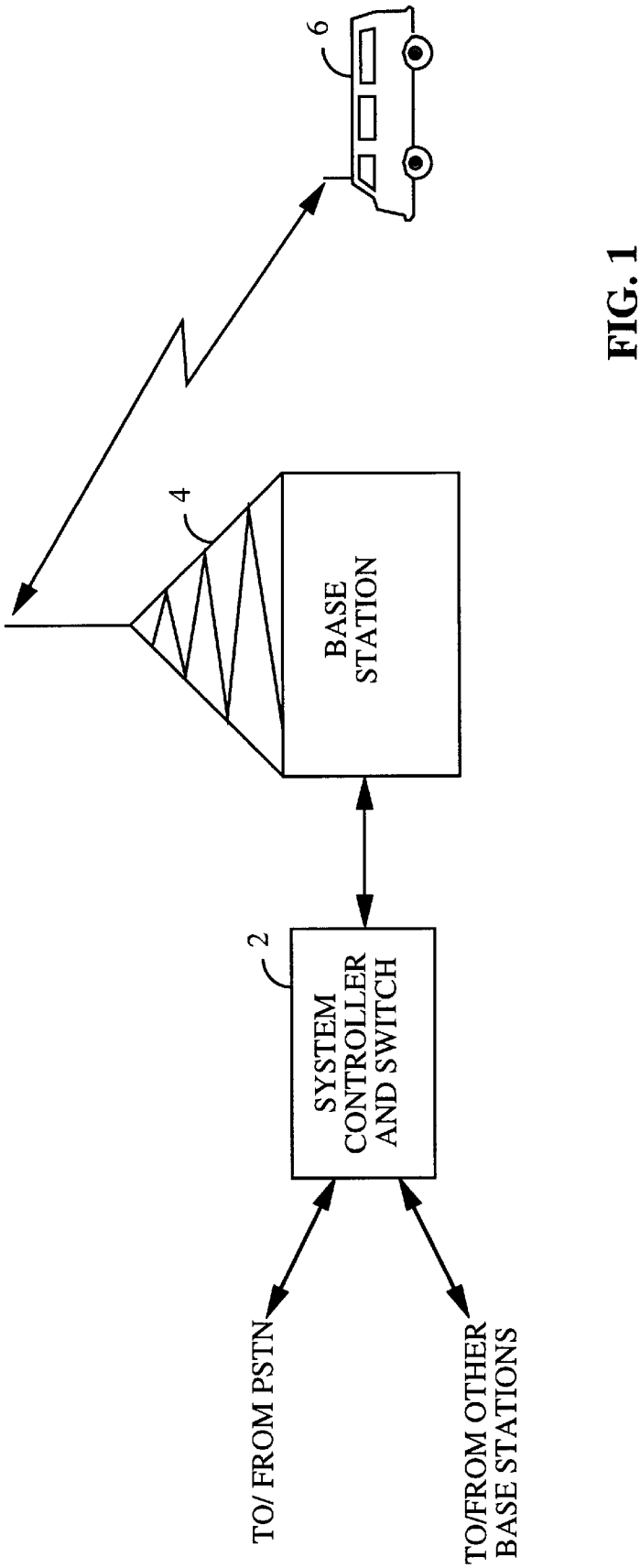

FIG. 1

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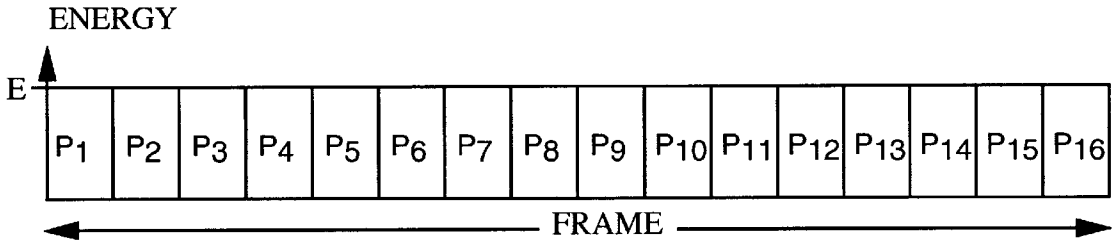
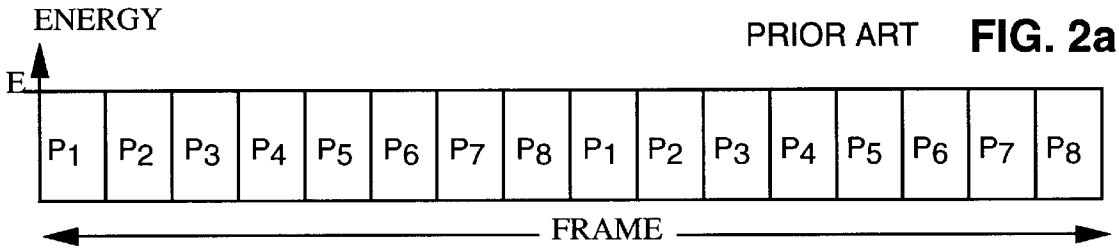
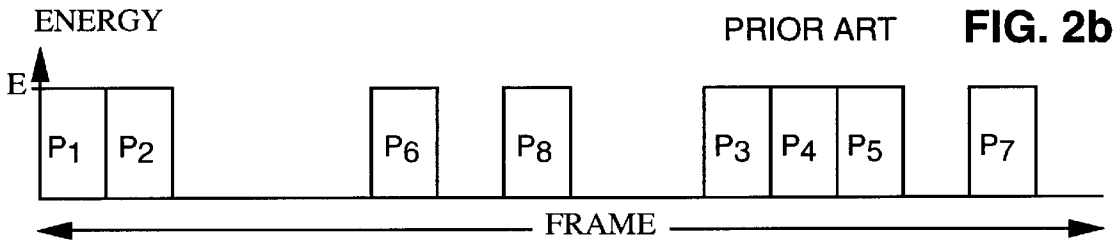


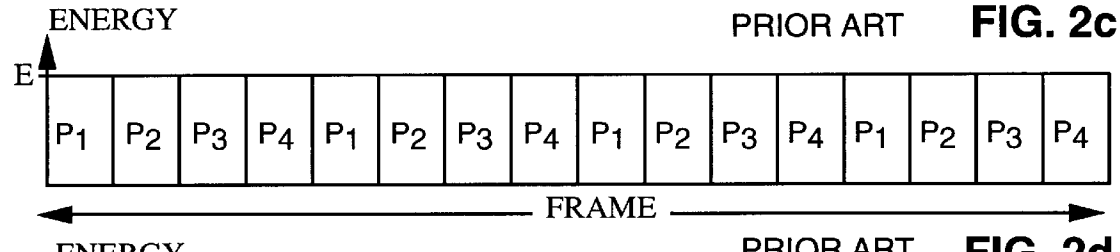
PRIOR ART **FIG. 2a**



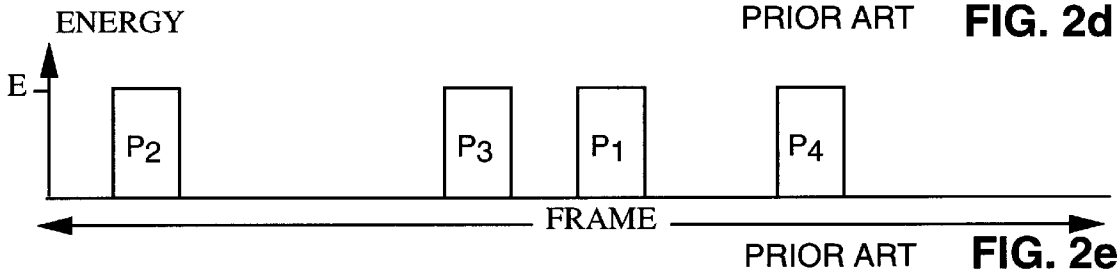
PRIOR ART **FIG. 2b**



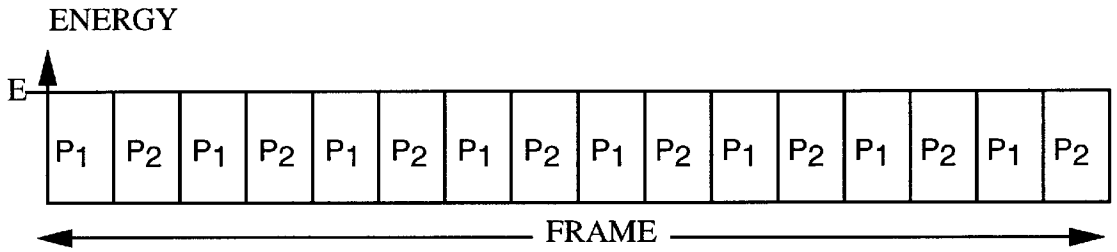
PRIOR ART **FIG. 2c**



PRIOR ART **FIG. 2d**



PRIOR ART **FIG. 2e**



PRIOR ART **FIG. 2f**

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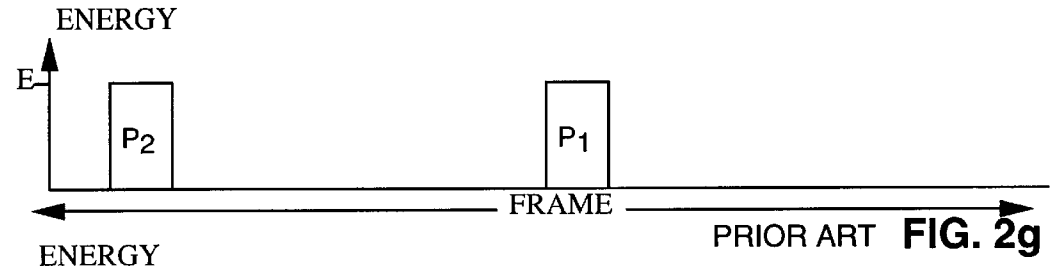
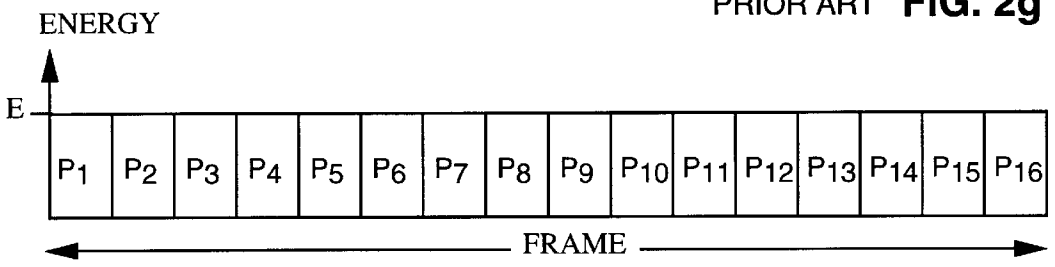
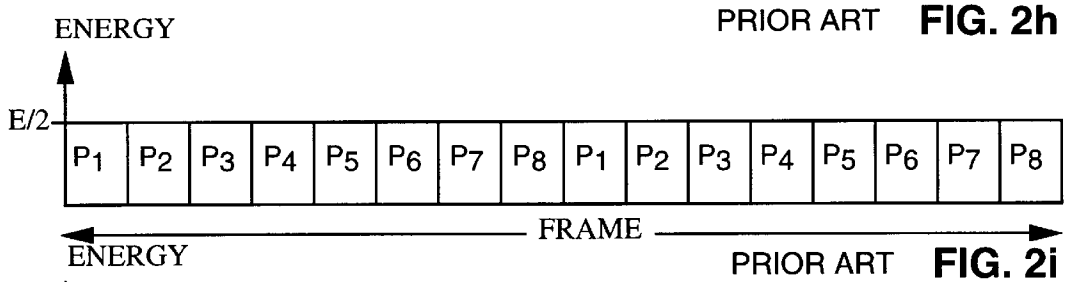


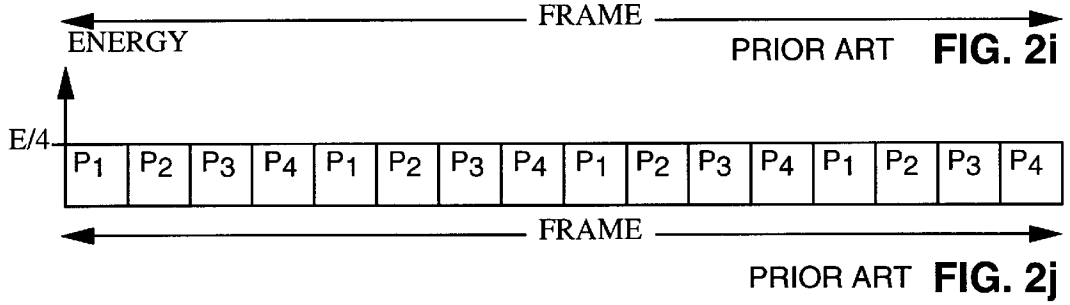
PRIOR ART **FIG. 2g**



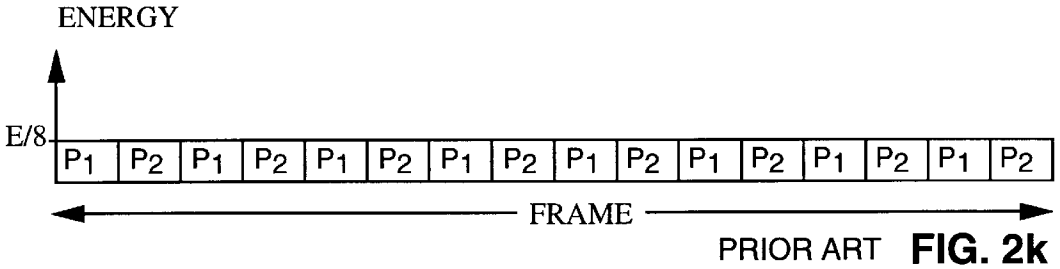
PRIOR ART **FIG. 2h**



PRIOR ART **FIG. 2i**



PRIOR ART **FIG. 2j**



PRIOR ART **FIG. 2k**

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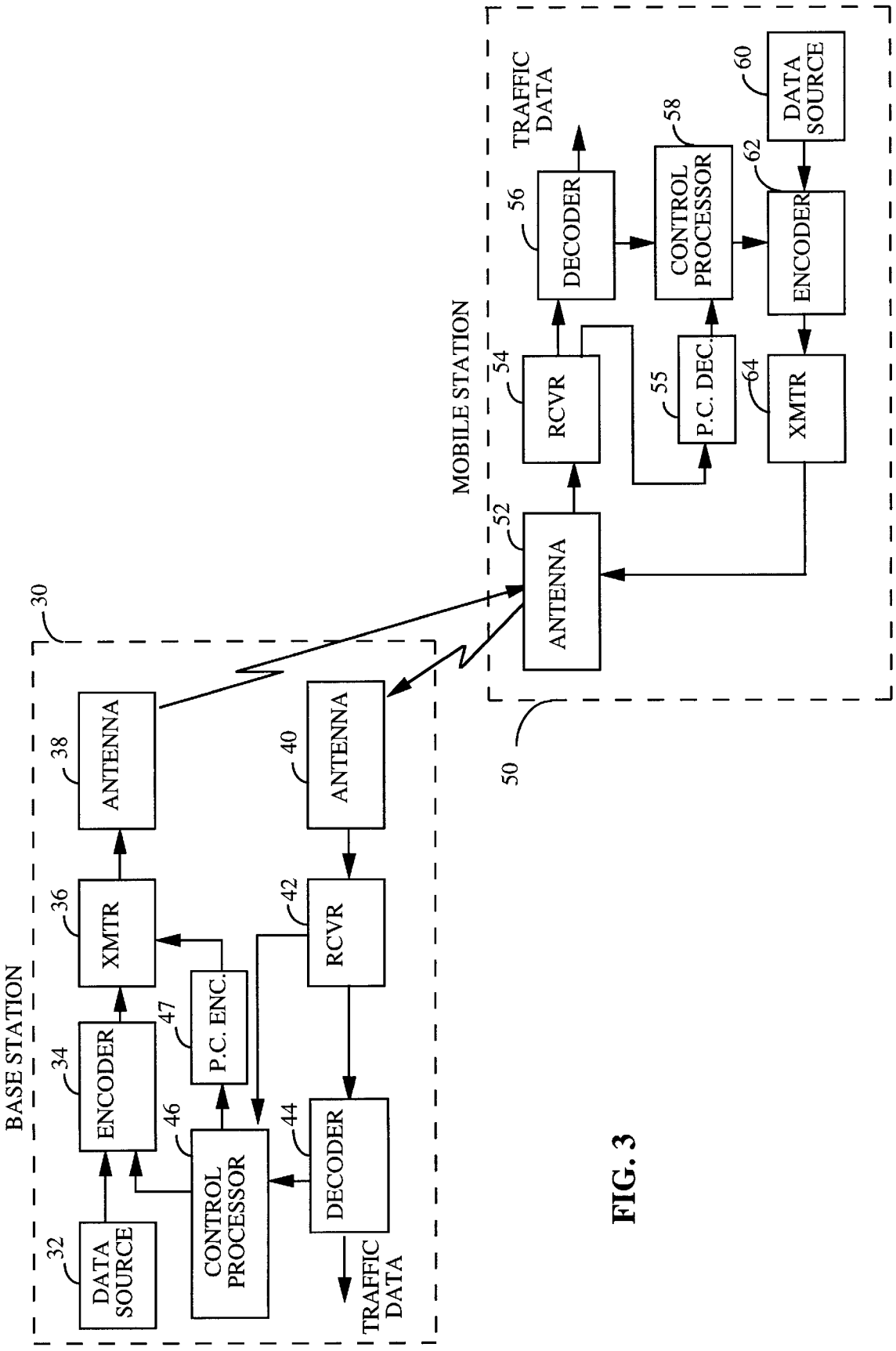

FIG. 3

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