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United States Patent [19]

Yi

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[54] **SYSTEM FOR TURBO-CODED SATELLITE DIGITAL AUDIO BROADCASTING**

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[21] Appl. No.: **08/908,045**

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[51] **Int. Cl.**[6] **H04J 13/00**

[52] **U.S. Cl.** **375/259**; 375/200; 370/342; 370/208

[58] **Field of Search** 375/200, 259, 375/260, 267, 347; 370/208, 209, 320, 342, 486; 455/3.2, 103, 132, 133, 137, 12.1, 427, 506

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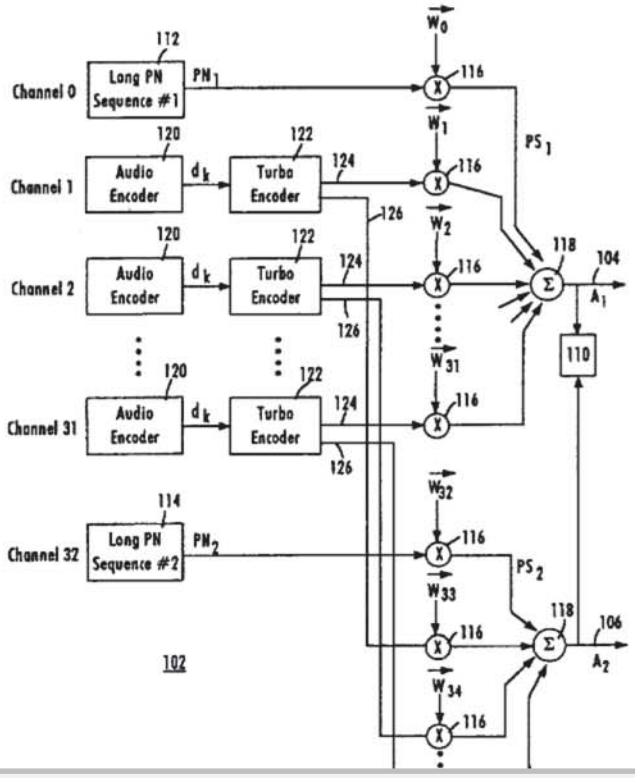
[57] **ABSTRACT**

A system and method for broadcasting an audio signal in a turbo-coded satellite digital audio broadcasting system is provided that utilizes the combination of a turbo coding system having code combining and code diversity techniques to lower the power required for transmittal and to transmit at a higher code rate of ¼ by utilizing the puncturing sequence and a pilot signal assisted orthogonal CDMA; the invention includes an improved receiver system that uses modified RAKE receivers in order to mitigate the Rayleigh multipath fading, shadowing, and temporal blockage and improve performance. The invention further uses a terrestrial gap filler network having a reduced amount of gap fillers.

31 Claims, 6 Drawing Sheets



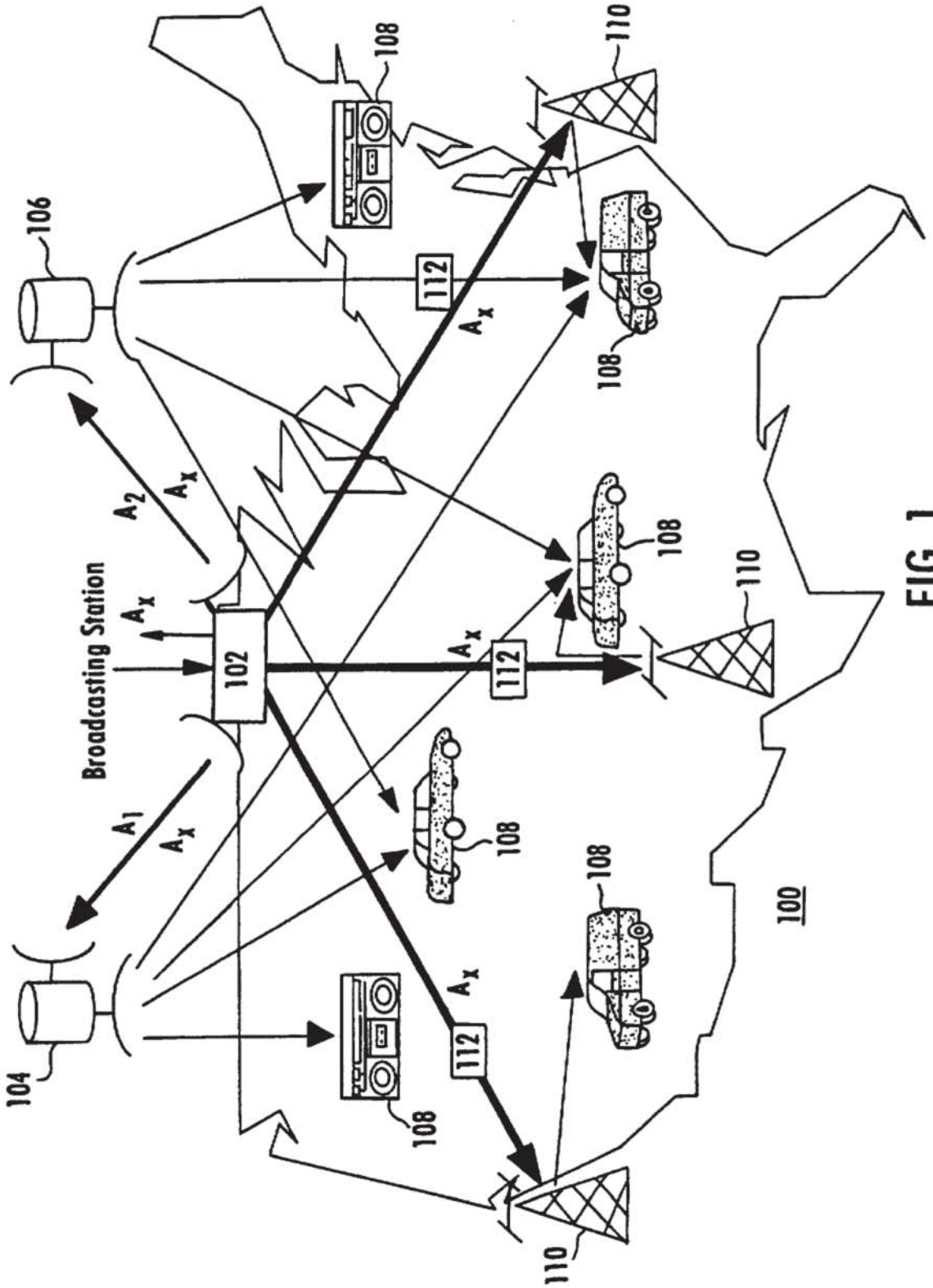


FIG. 1

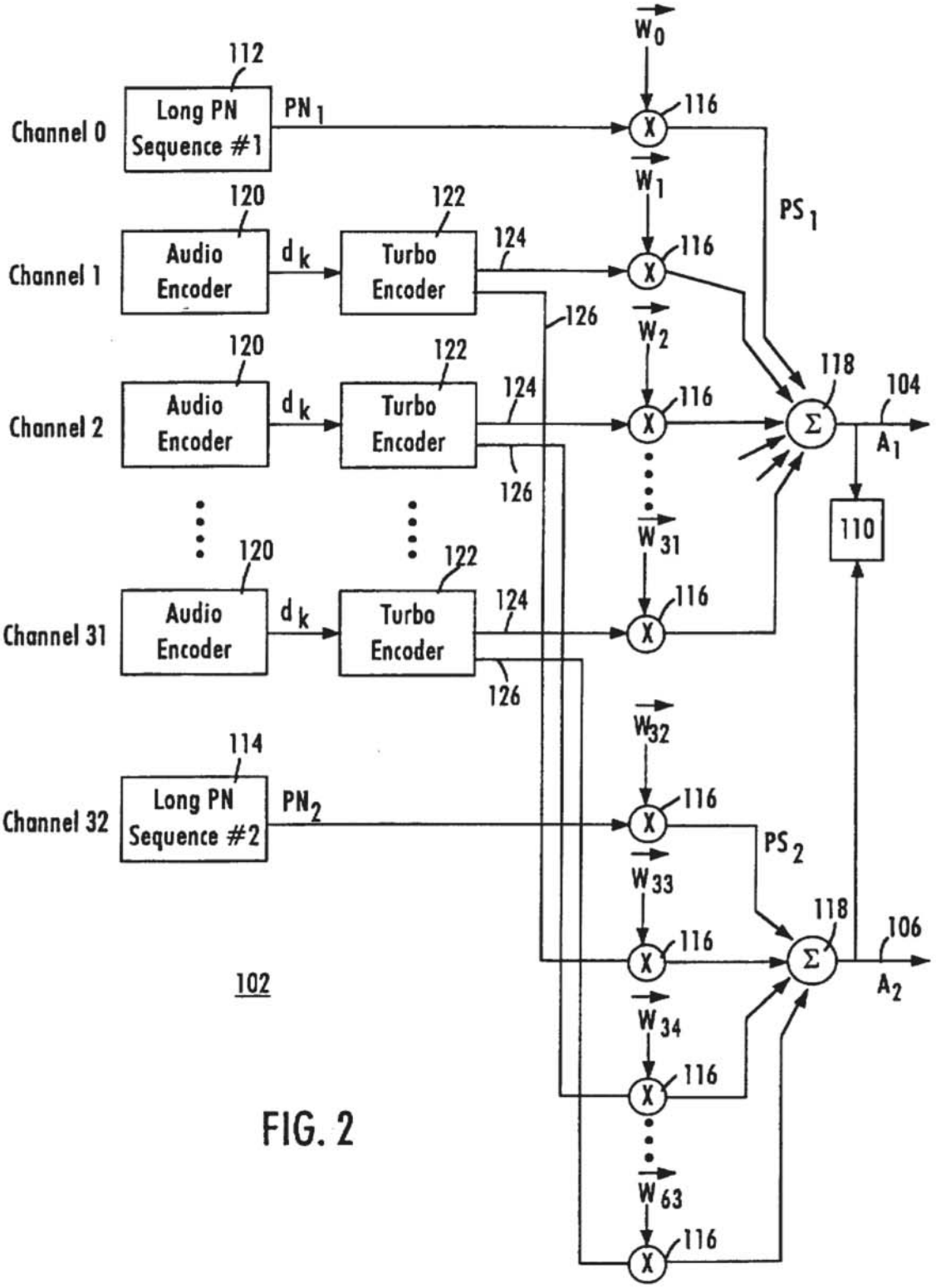


FIG. 2

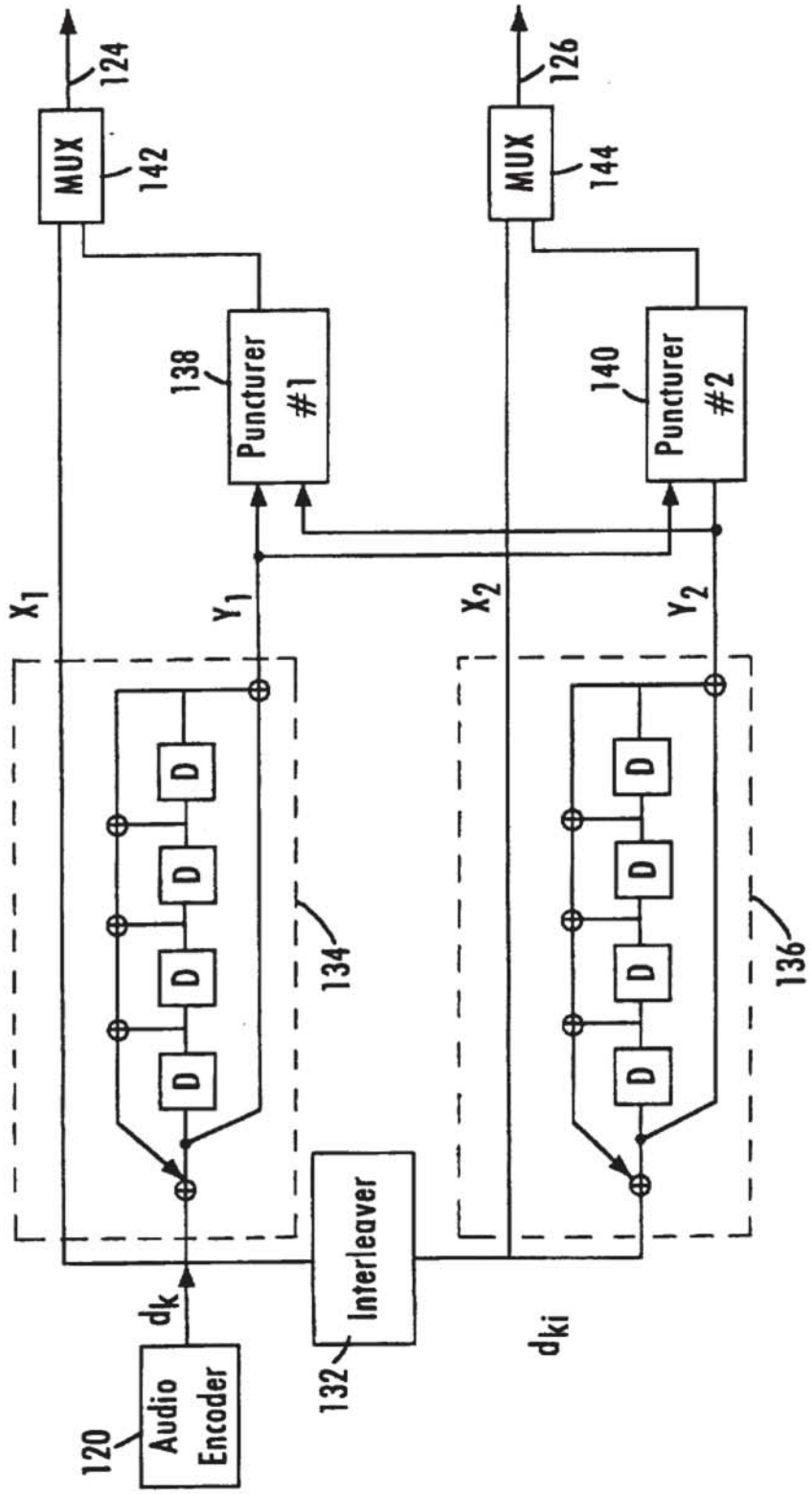


FIG. 3

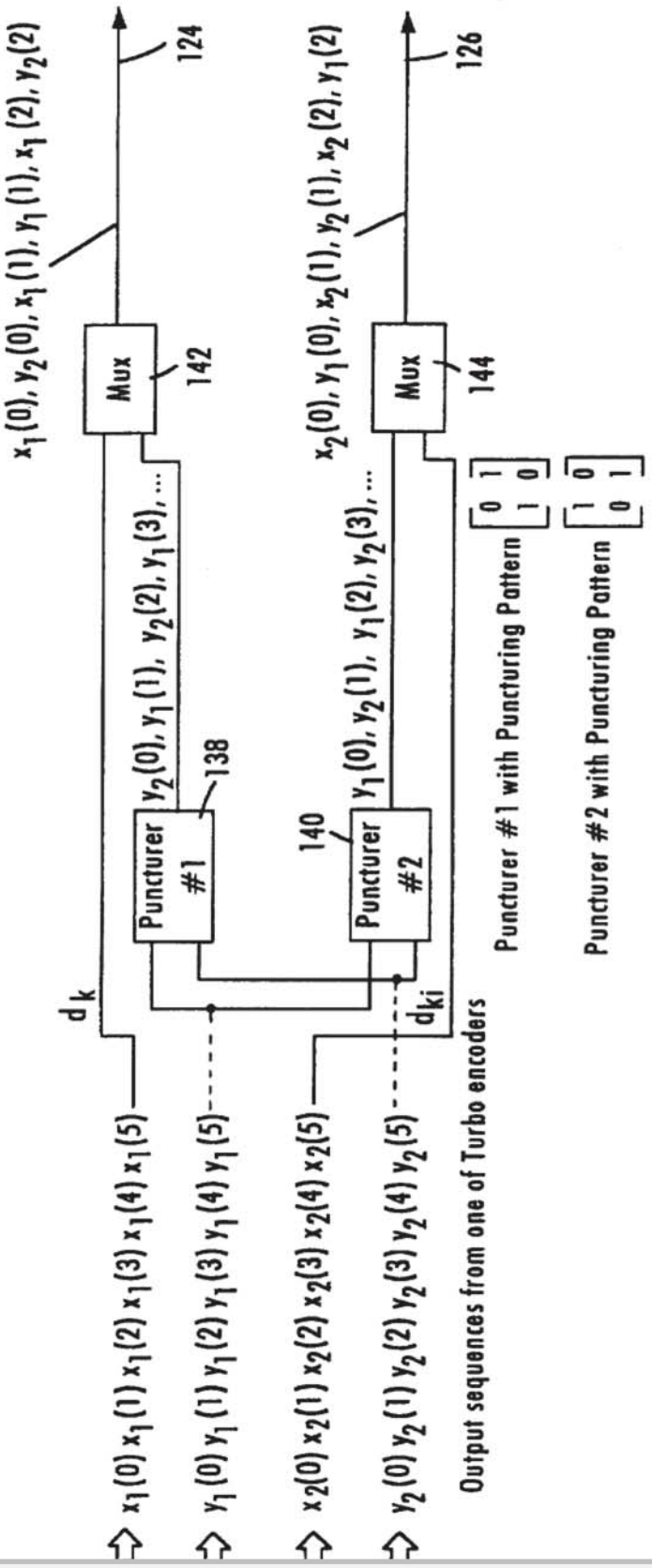


FIG. 4

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