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(54) **ADAPTIVE CHANNEL TRACKING USING PILOT SEQUENCES**

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(58) **Field of Search** 375/231, 232, 375/233, 328, 340, 342, 346, 350, 363, 364, 368; 370/506, 509, 510, 511, 512, 514, 503, 520, 528; 708/305, 322

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(57) **ABSTRACT**

Methods and systems are provided which utilize pilots in an information sequence to periodically retrain a channel estimator. Thus, a channel tracker may be synchronized using a synchronization sequence and then periodically retrained using known pilot symbols. Furthermore, the utilization of pilots may allow for the detection of errors in previous channel estimates. When errors are detected, a new channel estimate may be used based on the retraining using the pilot symbols and, optionally, previous errors in symbol estimation may be corrected. Thus, by retraining based on pilot symbols, the propagation of errors may be reduced.

28 Claims, 6 Drawing Sheets
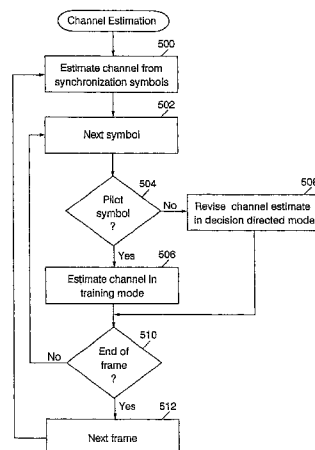
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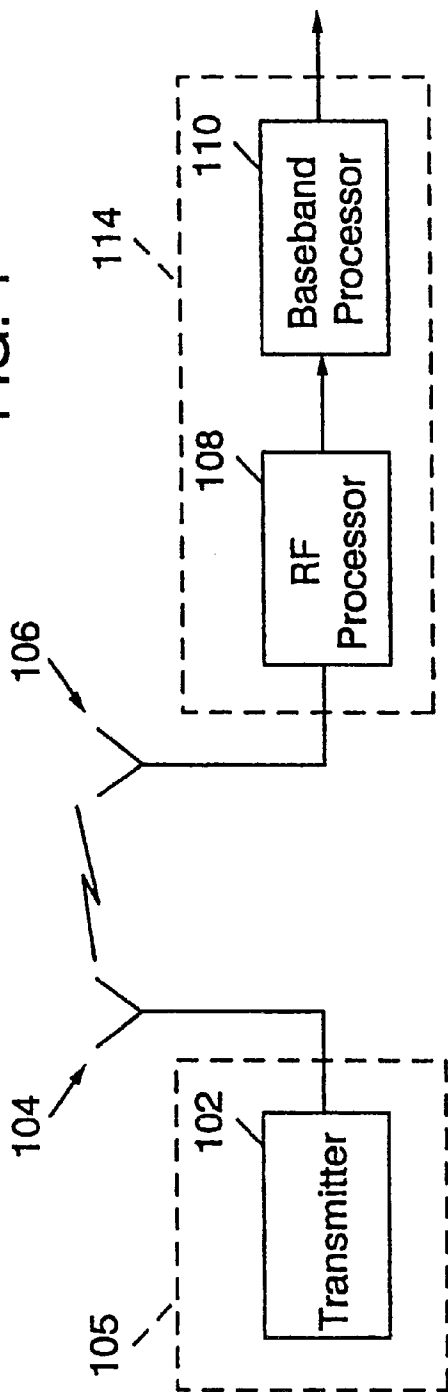
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FIG. 1

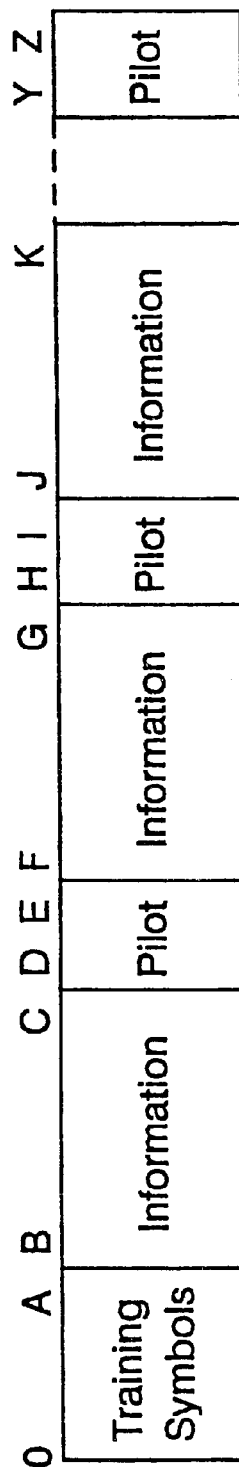Transmitter

102

105

104

106

114

RF Processor

108

Baseband Processor

110

FIG. 4

0	A B	C D E	F	G H I J	K	Y Z
Training Symbols	Information	Pilot	Information	Pilot	Information	Pilot

FIG. 2

10

18

20

Antenna

22

Antenna Feed Structure

12

Transmitter

14

Receiver

Correcting Channel Estimator

15

16

User Interface

FIG. 3

DOCKET ALARM
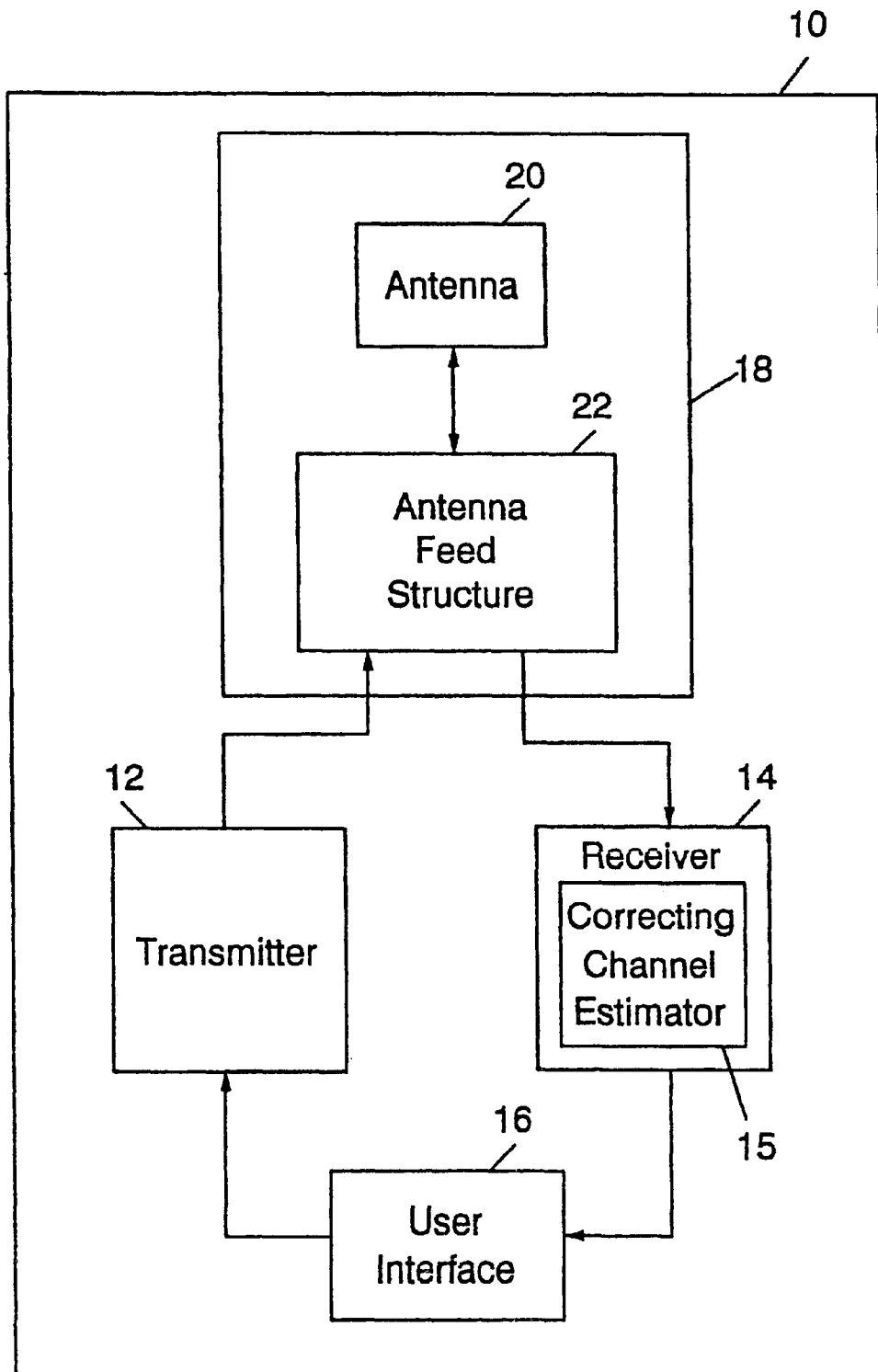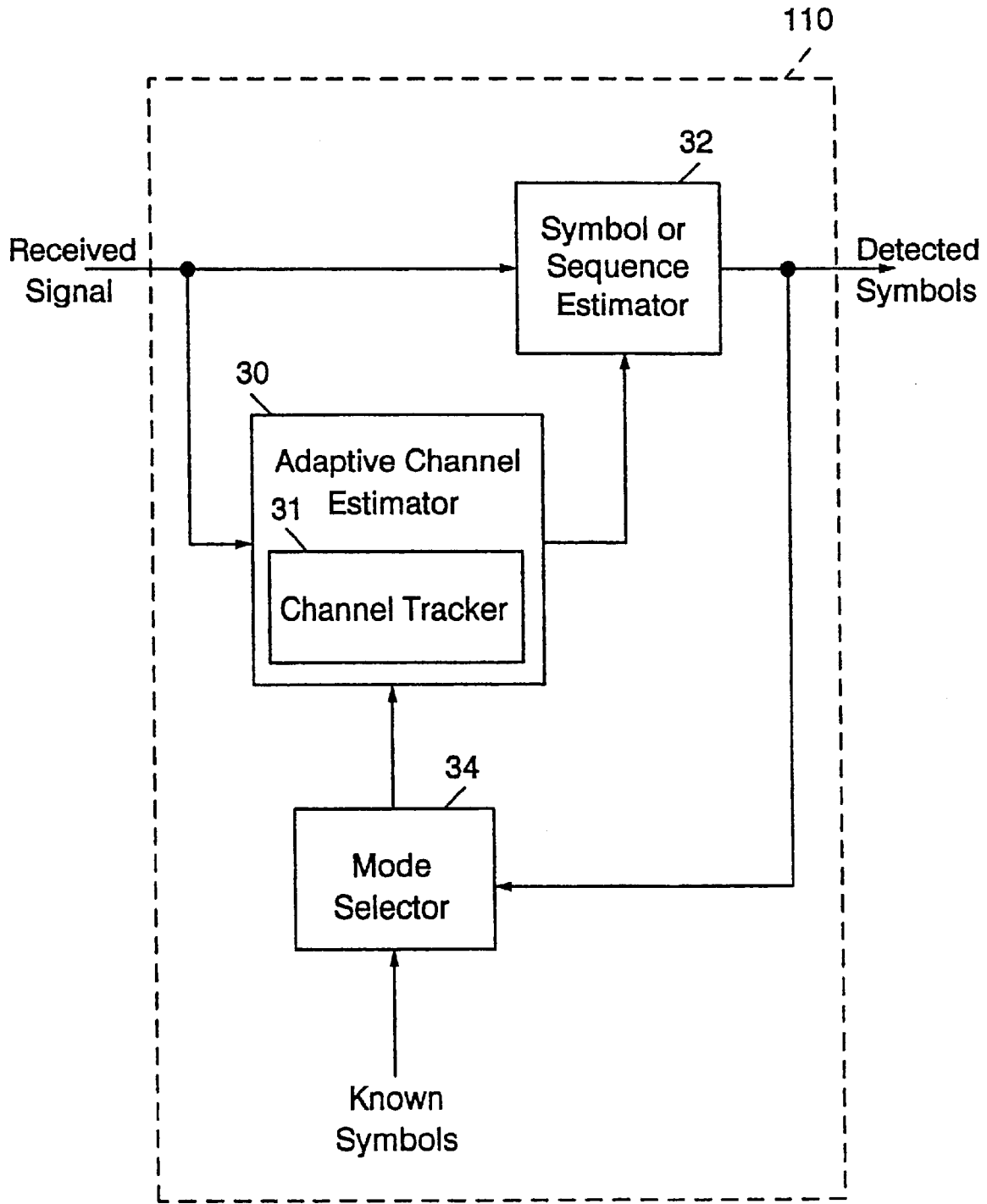
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