United States Patent [19]

Kudo

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[54] **ADJUSTING DATA TRANSMISSION RATE BASED ON RECEIVED SIGNAL QUALITY**

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[21] Appl. No.: **586,509**

[22] Filed: **Mar. 5, 1984**

[30] **Foreign Application Priority Data**

Mar. 9, 1983 [JP] Japan 58-37274

[51] Int. Cl.⁴ **H04J 3/22**
[52] U.S. Cl. **375/13;** 375/58; 370/84
[58] **Field of Search** .... 375/13, 58, 109, 121; 371/5; 370/79, 84; 178/69 A, 69 M

[56] **References Cited**

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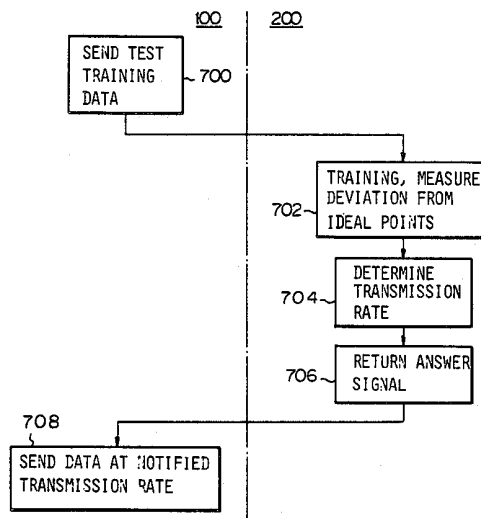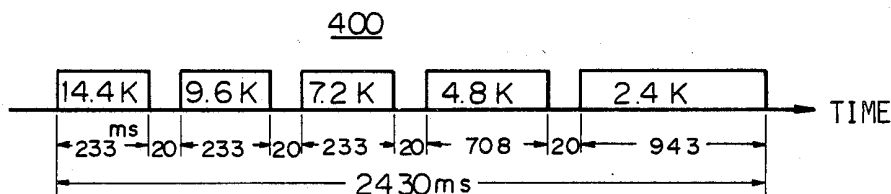
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Attorney, Agent, or Firm—David G. Alexander

[57] **ABSTRACT**

A data transmission control system for allowing remote transceiver stations to transmit data via a telephone line or like analog transmission line through modems. When transmit and receive stations have been interconnected by a call, a training sequence for the modem is executed and, also, a test signal transmission sequence is effected to set up a data transmission rate before delivery of information. When the receive station has received test training data inclusive of a plurality of transmission rates from the transmit station, the function of the modem at the receive station is checked with respect to each of the transmission rates on a signal space diagram, thereby determining whether the receive station is capable of normally receiving data at the transmission rate. Training on the transmission rates which a modem can use is executed satisfying a predetermined protocol and without increasing the protocol time.

9 Claims, 11 Drawing Figures

Fig. 1

TRANSMIT STATION	—	TRANSMISSION LINE	—	RECEIVE STATION

100   300   200
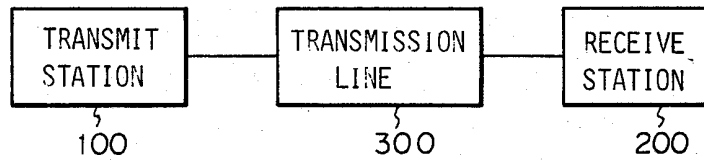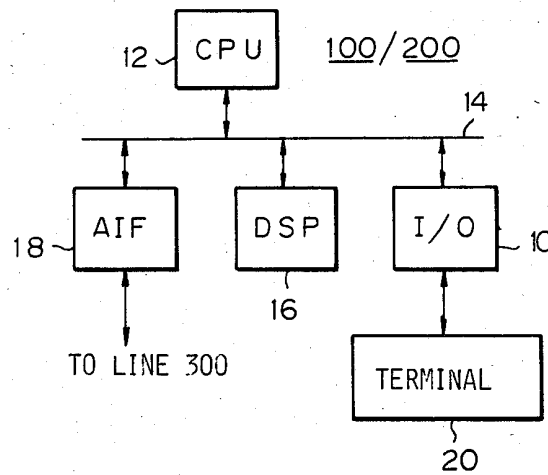
Fig. 2

12 — CPU   100/200

14

18 — AIF   DSP   I/O — 10

TO LINE 300   16   TERMINAL

20

Fig. 3
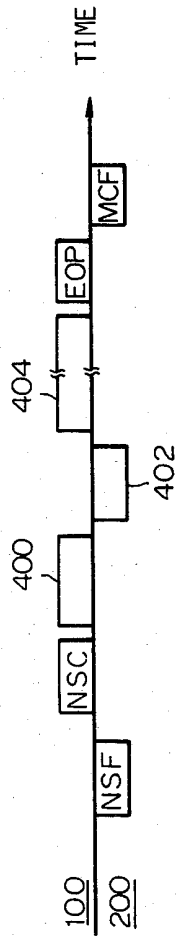
Fig. 4
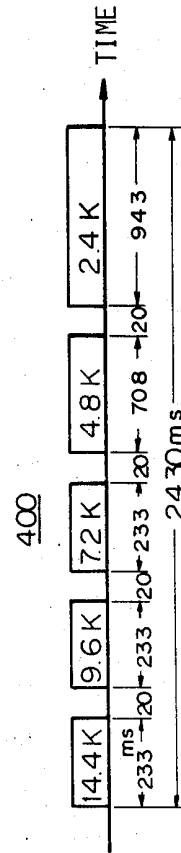
Fig. 5A

Fig. 5B   Fig. 5C   Fig. 5D

Fig. 6 A

TIME

Fig. 6B

TIME

Fig. 7

100   200

SEND TEST
TRAINING
DATA   ~ 700

702~ TRAINING, MEASURE
DEVIATION FROM
IDEAL POINTS

704~ DETERMINE
TRANSMISSION
RATE

706~ RETURN ANSWER
SIGNAL

708

SEND DATA AT NOTIFIED
TRANSMISSION RATE
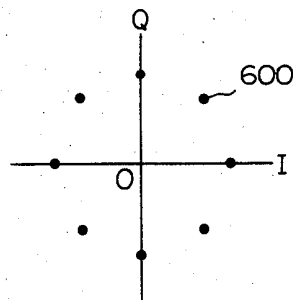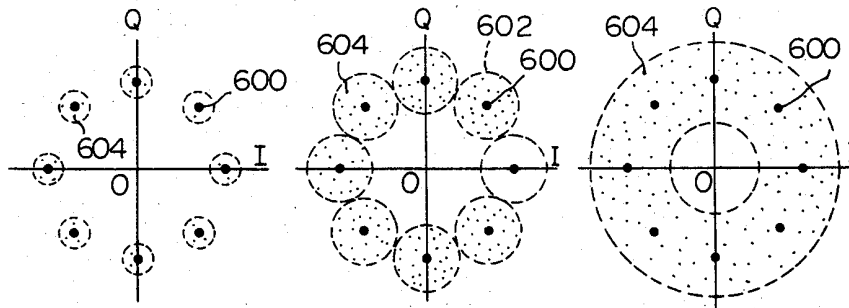
DOCKET ALARM
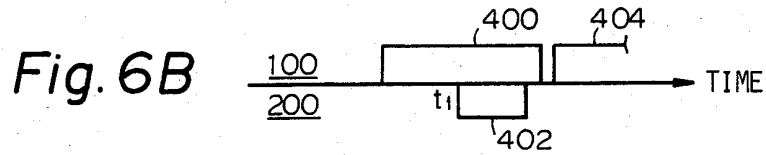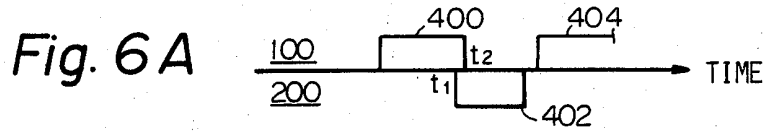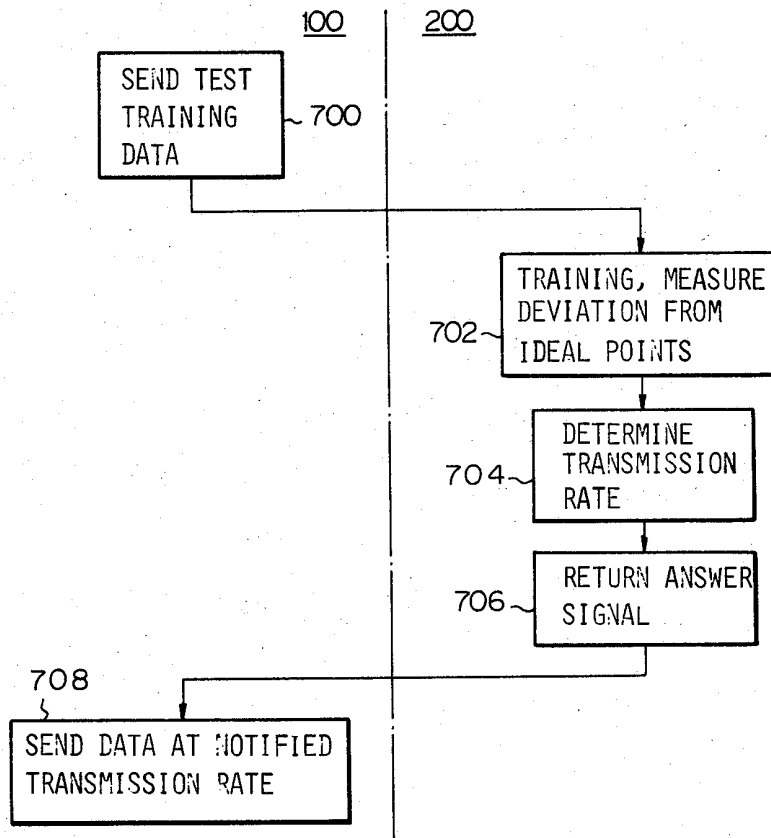
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