



US006490295B1

(12) **United States Patent**  
**Cooklev et al.**

(10) **Patent No.:** **US 6,490,295 B1**  
(45) **Date of Patent:** **Dec. 3, 2002**

(54) **HIGH-SPEED MODEM OPERATING OVER TWO OR MORE TELEPHONE LINES**

(75) Inventors: **Todor Cooklev**, Salt Lake City, UT (US); **Kevin Smart**, Bountiful, UT (US)

(73) Assignee: **3Com Corporation**, Santa Clara, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/304,392**

(22) Filed: **May 4, 1999**

(51) **Int. Cl.**<sup>7</sup> ..... **H04J 3/04**; H04J 3/16; H04L 5/16

(52) **U.S. Cl.** ..... **370/465**; 370/536; 375/222

(58) **Field of Search** ..... 375/242, 285, 375/365, 254, 222, 368, 266, 356, 221; 370/535-537, 538, 493-495, 271, 465; 379/345, 87, 93.01

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

- 5,214,637 A 5/1993 Sridhar et al.
- 5,515,398 A 5/1996 Walsh et al.
- 5,636,037 A 6/1997 Saitoh
- 5,682,404 A \* 10/1997 Miller ..... 375/222

- 5,801,695 A 9/1998 Townshend
- 5,815,505 A 9/1998 Mills
- 5,859,872 A \* 1/1999 Townshend ..... 375/242
- 6,023,493 A \* 2/2000 Olafsson ..... 375/354
- 6,198,749 B1 \* 3/2001 Hui et al. .... 370/536
- 6,233,250 B1 \* 5/2001 Liu et al. .... 370/469
- 6,240,137 B1 \* 5/2001 Kato ..... 375/240.26

\* cited by examiner

*Primary Examiner*—Kwang Bin Yao

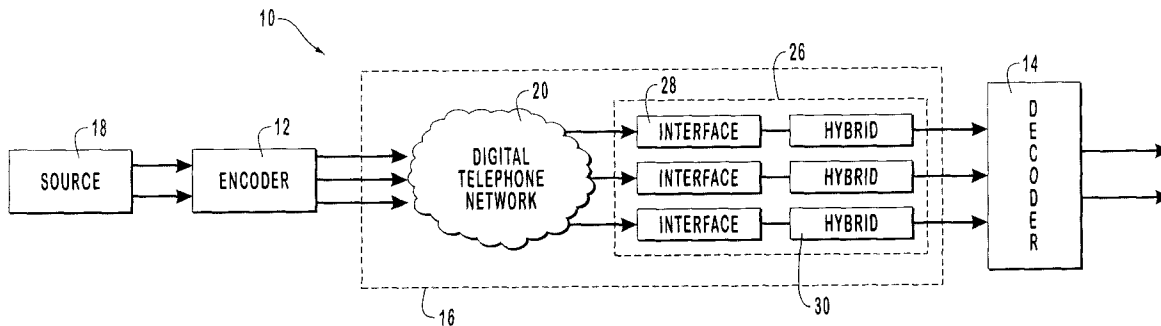
*Assistant Examiner*—Hanh Nguyen

(74) *Attorney, Agent, or Firm*—Workman, Nydegger & Seeley

(57) **ABSTRACT**

A communication system configured to transceive a signal along multiple communication media of the communication system thereby increasing the rate at which the signal is transceived. The communication system comprising a source configured to transceive a signal. A communication apparatus configured for decomposing the signal into a plurality of manipulated signals. The number of the plurality of manipulated signals being determined by the number of the multiple communication media in communication with the source and the maximum transceivable rate of each communication media. In communication with the communication apparatus is a reconstructing apparatus that is configured for reconstructing the plurality of manipulated signals into the signal, the signal being capable of being transceived by a host.

**39 Claims, 11 Drawing Sheets**



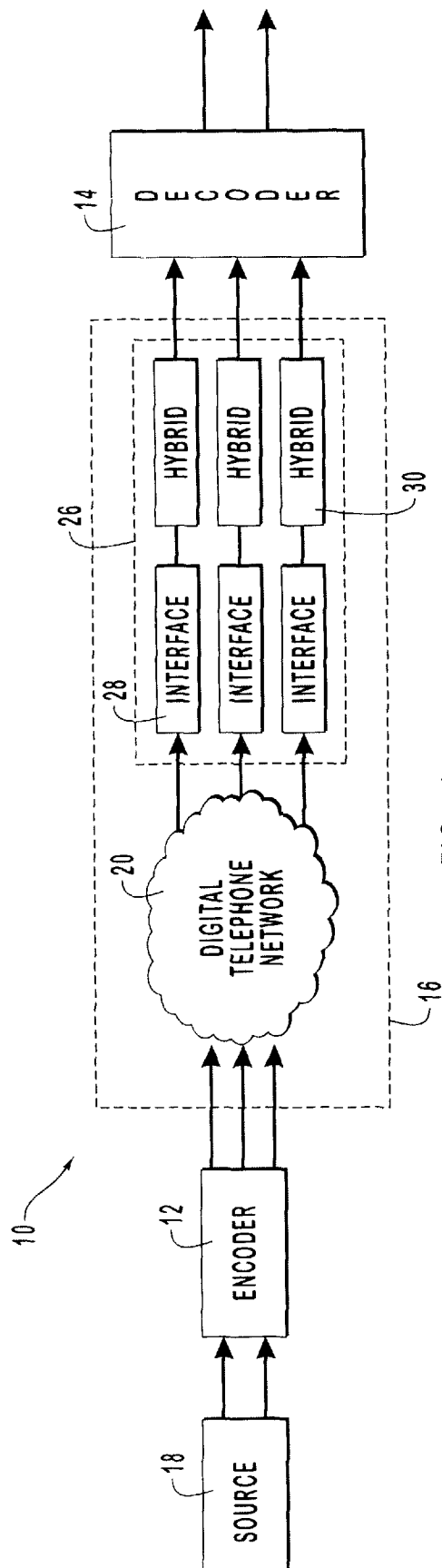


FIG. 1

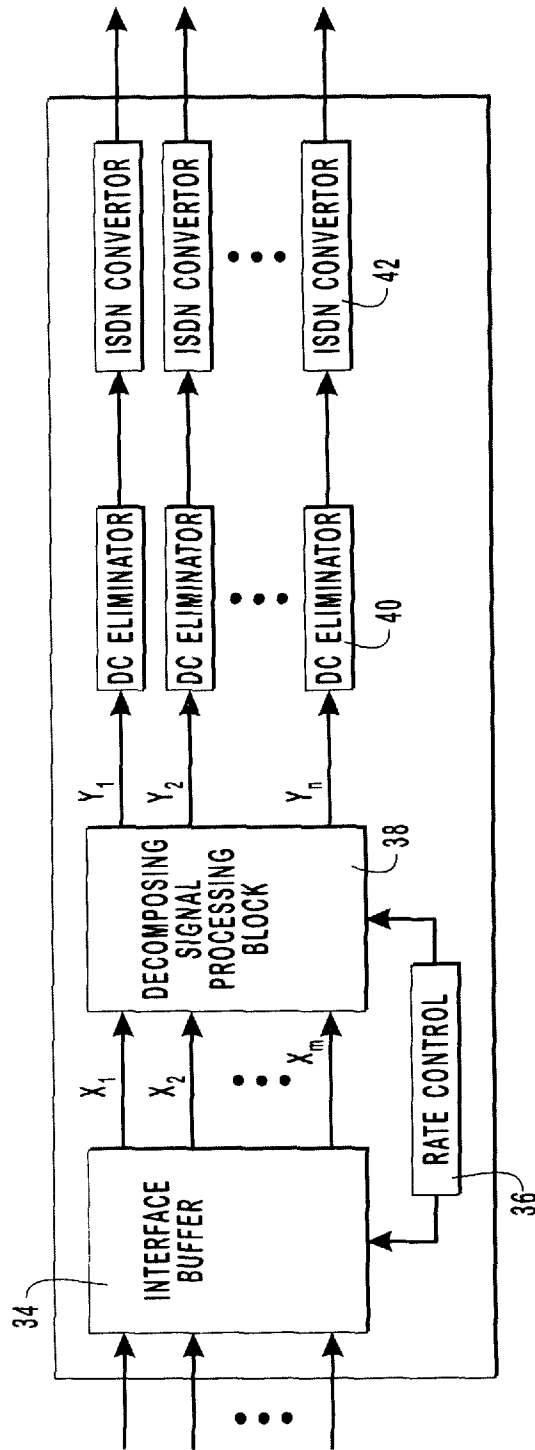


FIG. 2

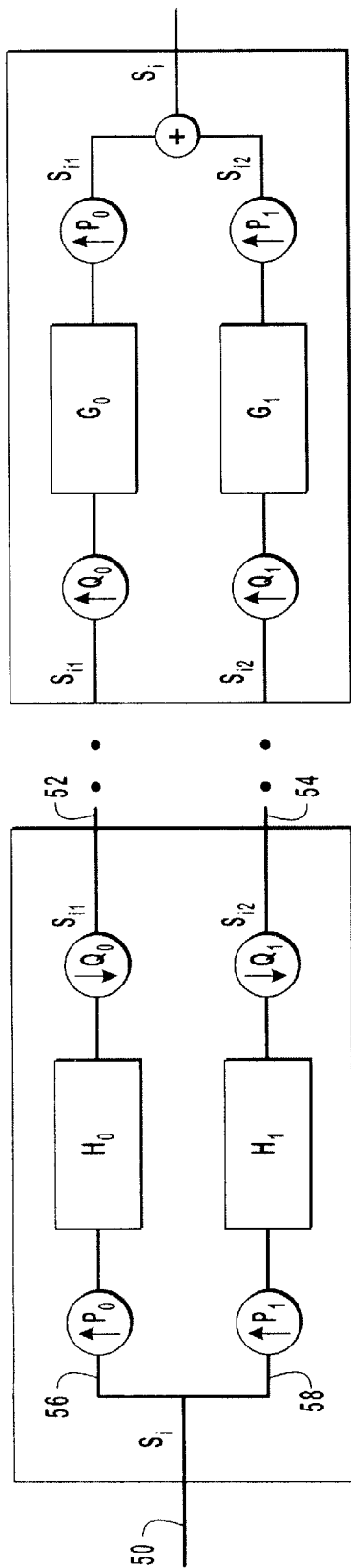


FIG. 3B

FIG. 3A

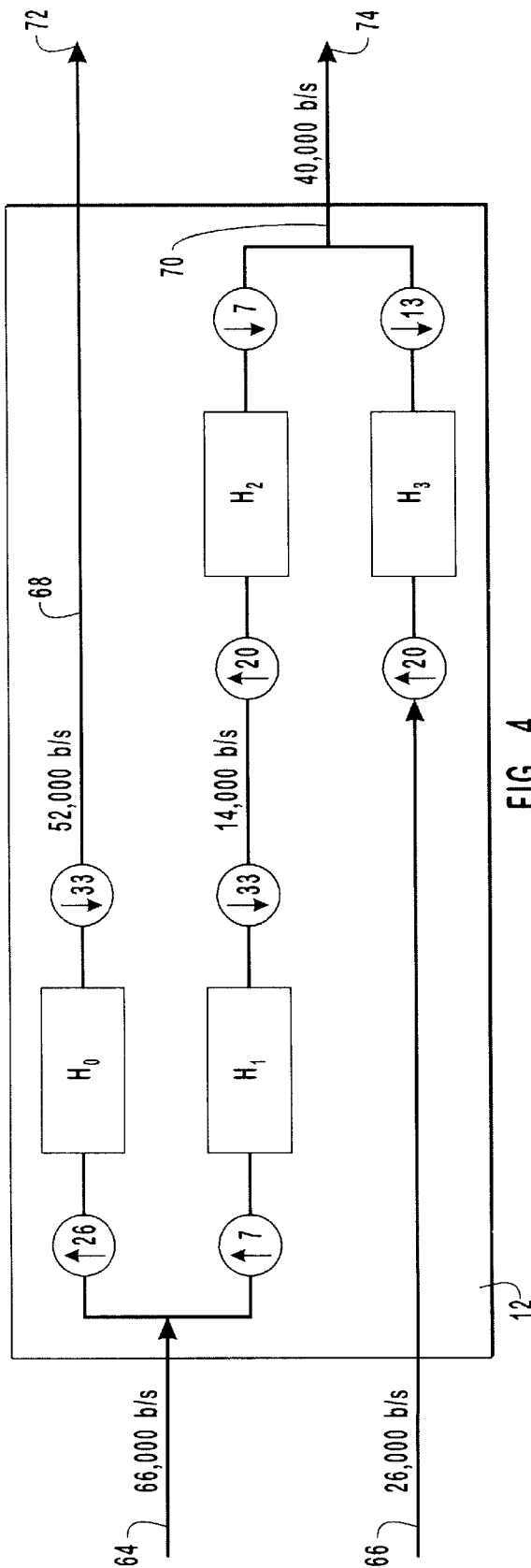


FIG. 4

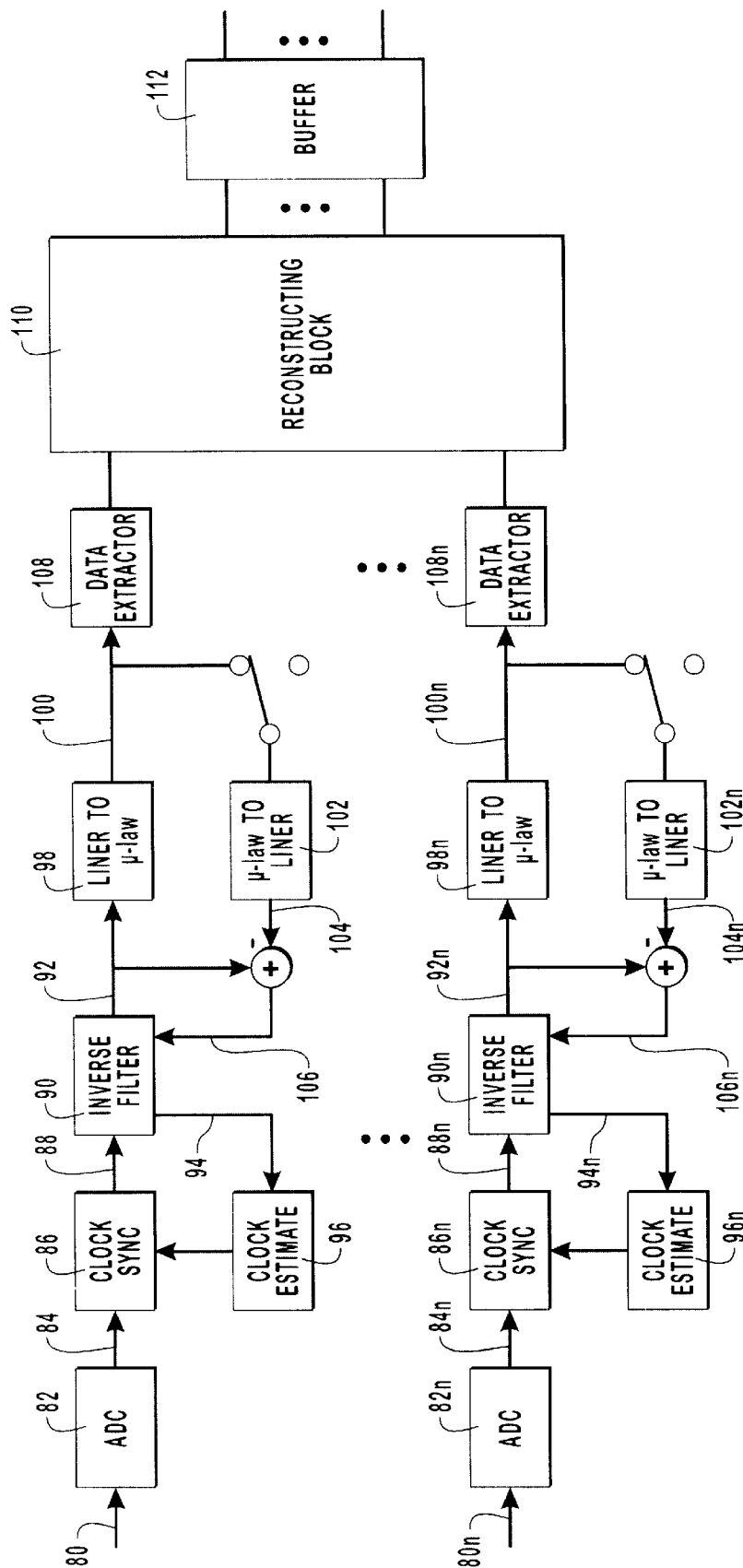


FIG. 5

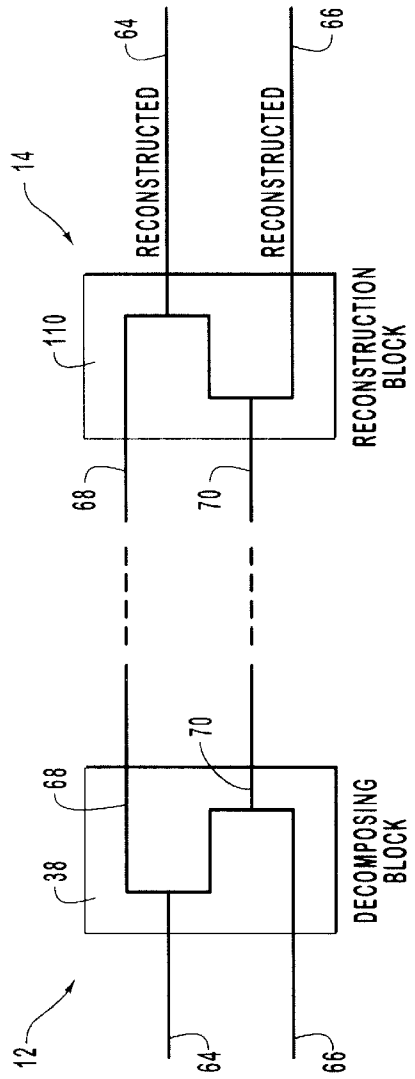


FIG. 6

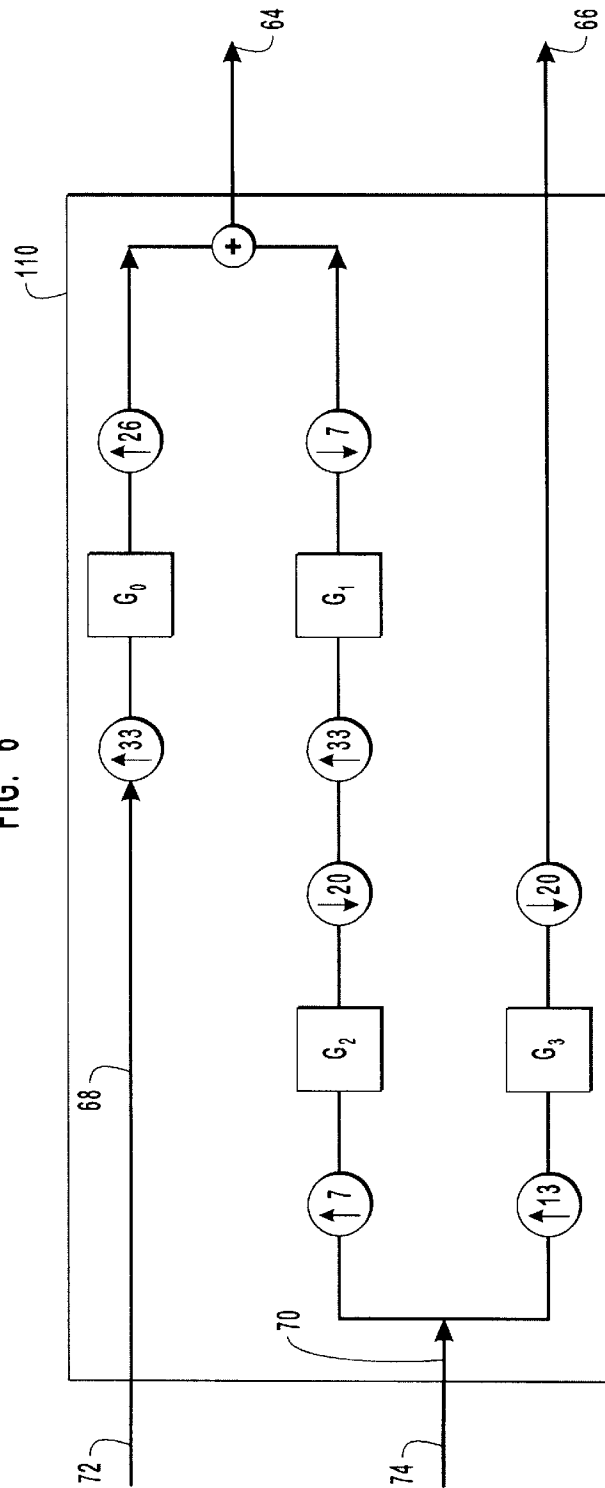


FIG. 7

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.