



United States Patent [19]

[11] Patent Number: **5,237,566**

Brand et al.

[45] Date of Patent: **Aug. 17, 1993**

[54] NETWORK HUB FOR MAINTAINING NODE BANDWIDTH IN A SINGLE-NODE NETWORK

| | | | |
|-----------|---------|----------------|----------|
| 4,773,067 | 9/1988 | Duxbury et al. | 370/60.1 |
| 4,843,606 | 6/1989 | Bux et al. | 370/85.4 |
| 4,887,076 | 12/1989 | Kent et al. | 370/61 |
| 4,910,731 | 3/1990 | Sakurai et al. | 370/60 |
| 4,947,387 | 8/1990 | Knorpp et al. | 370/60 |

[75] Inventors: Robert C. Brand, Andover, Mass.; Stanford L. Mantiply, Palo Alto, Calif.

Primary Examiner—Douglas W. Olms
Assistant Examiner—Hassan Kizou
Attorney, Agent, or Firm—Townsend and Townsend Hourie and Crew

[73] Assignee: Ungermann-Bass, Inc., Santa Clara, Calif.

[21] Appl. No.: 331,217

[57] ABSTRACT

[22] Filed: Mar. 30, 1989

A hub network system is provided for communication between nodes. The system can be used, e.g., when one node can be configured for baseband bus topology communication, such as LocalTalk™ communication. The node can communicate using the entire bandwidth of the medium, such as 230 Kbps bandwidth, even though other nodes are connected to the network using the hub card. Preferably, the hub card includes a multi-processor system with a shared memory for providing high internal effective bandwidth communication, such as 15 Mbps communication. A proxy scheme is provided so that the hub topology is transparent to any node which can operate as though it were configured in a bus topology.

[51] Int. Cl.⁵ H04L 12/44

[52] U.S. Cl. 370/61; 370/94.3

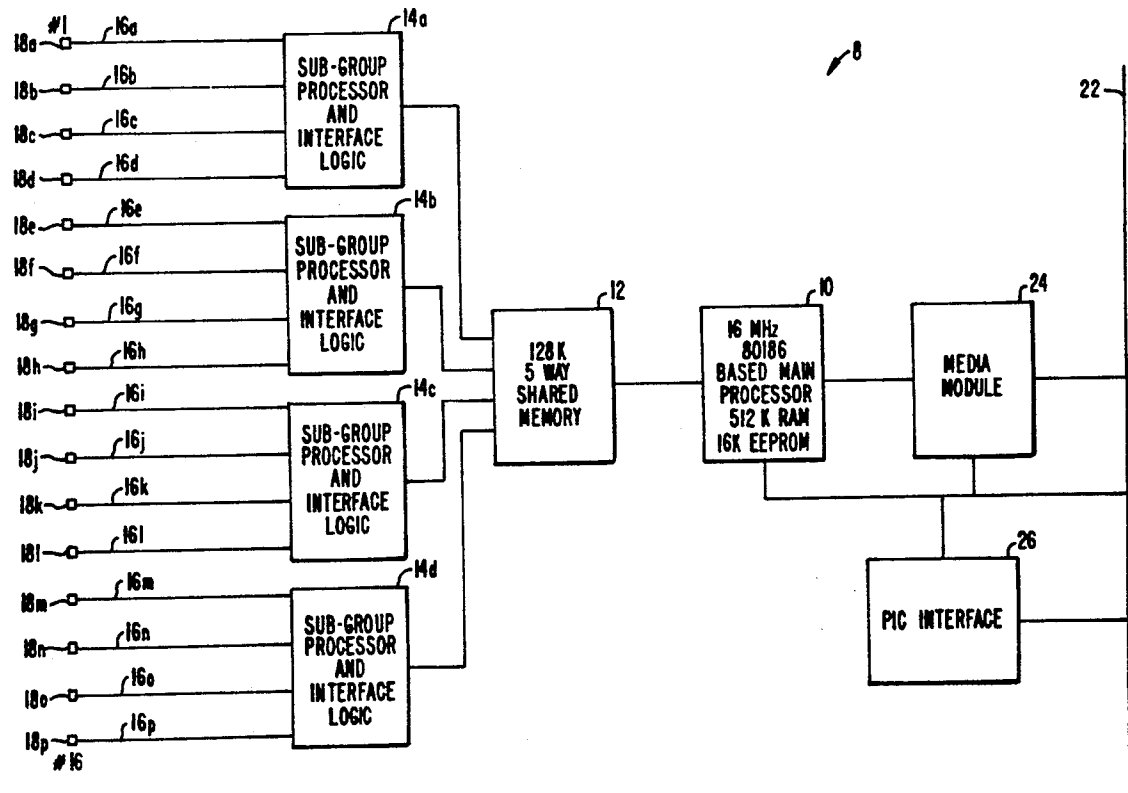
[58] Field of Search 370/85.1, 94.3, 61, 370/67, 85.13, 85.14, 91, 92, 85.4, 60.1, 85.3, 66, 68, 60; 379/88; 340/825.03, 825.52

[56] References Cited

U.S. PATENT DOCUMENTS

| | | | |
|-----------|---------|-----------------|----------|
| 4,058,672 | 11/1977 | Crager et al. | 370/61 |
| 4,549,047 | 10/1985 | Brian et al. | 379/88 |
| 4,670,871 | 6/1987 | Vaidya | 370/60 |
| 4,700,344 | 10/1987 | Kaino et al. | 370/94.3 |
| 4,716,408 | 12/1987 | O'Connor et al. | 370/85.4 |
| 4,751,701 | 6/1988 | Roos et al. | 370/85.3 |
| 4,769,812 | 9/1988 | Shimizu | 370/67 |
| 4,771,420 | 9/1988 | Deschaine | 370/68 |

15 Claims, 6 Drawing Sheets



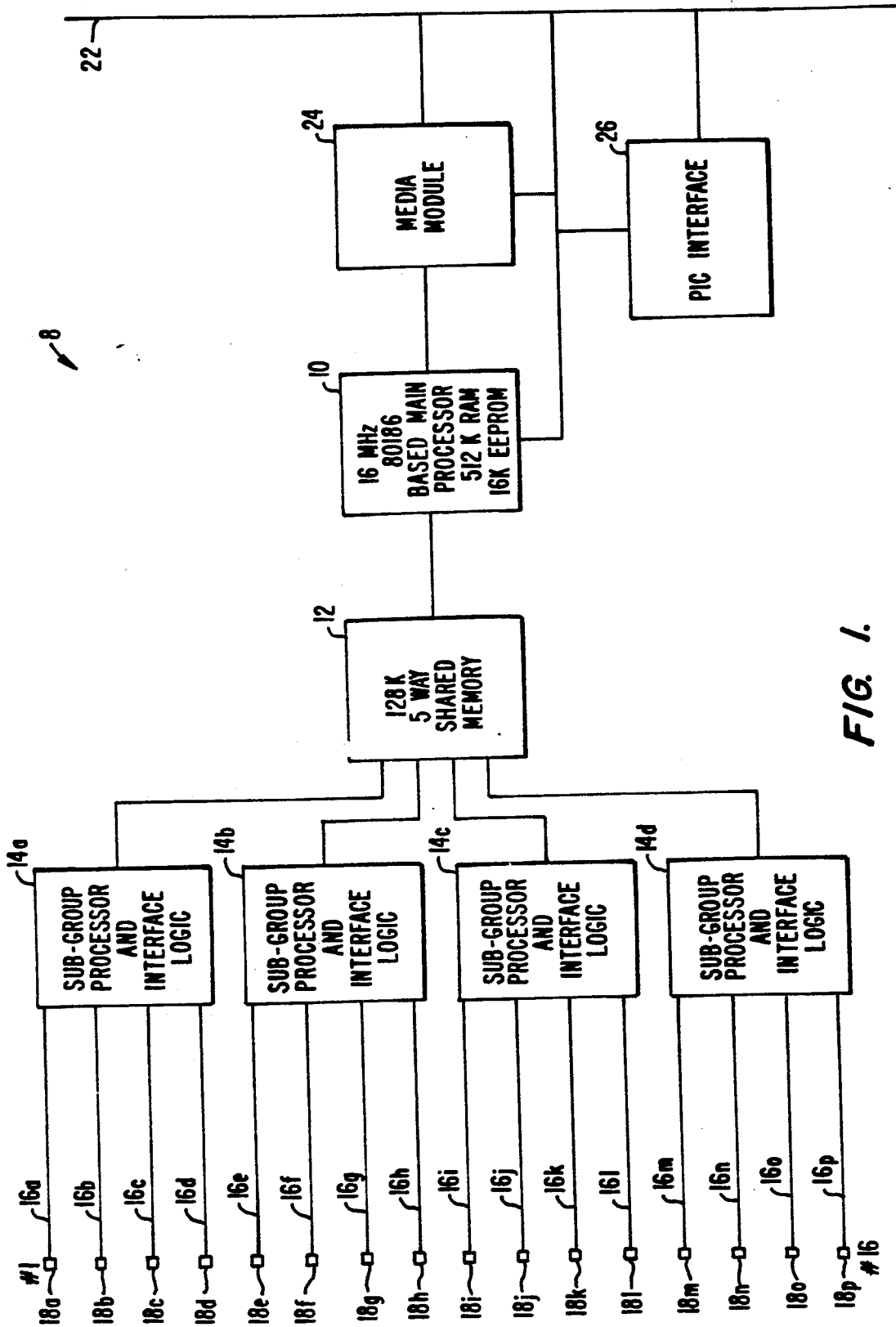


FIG. 1.

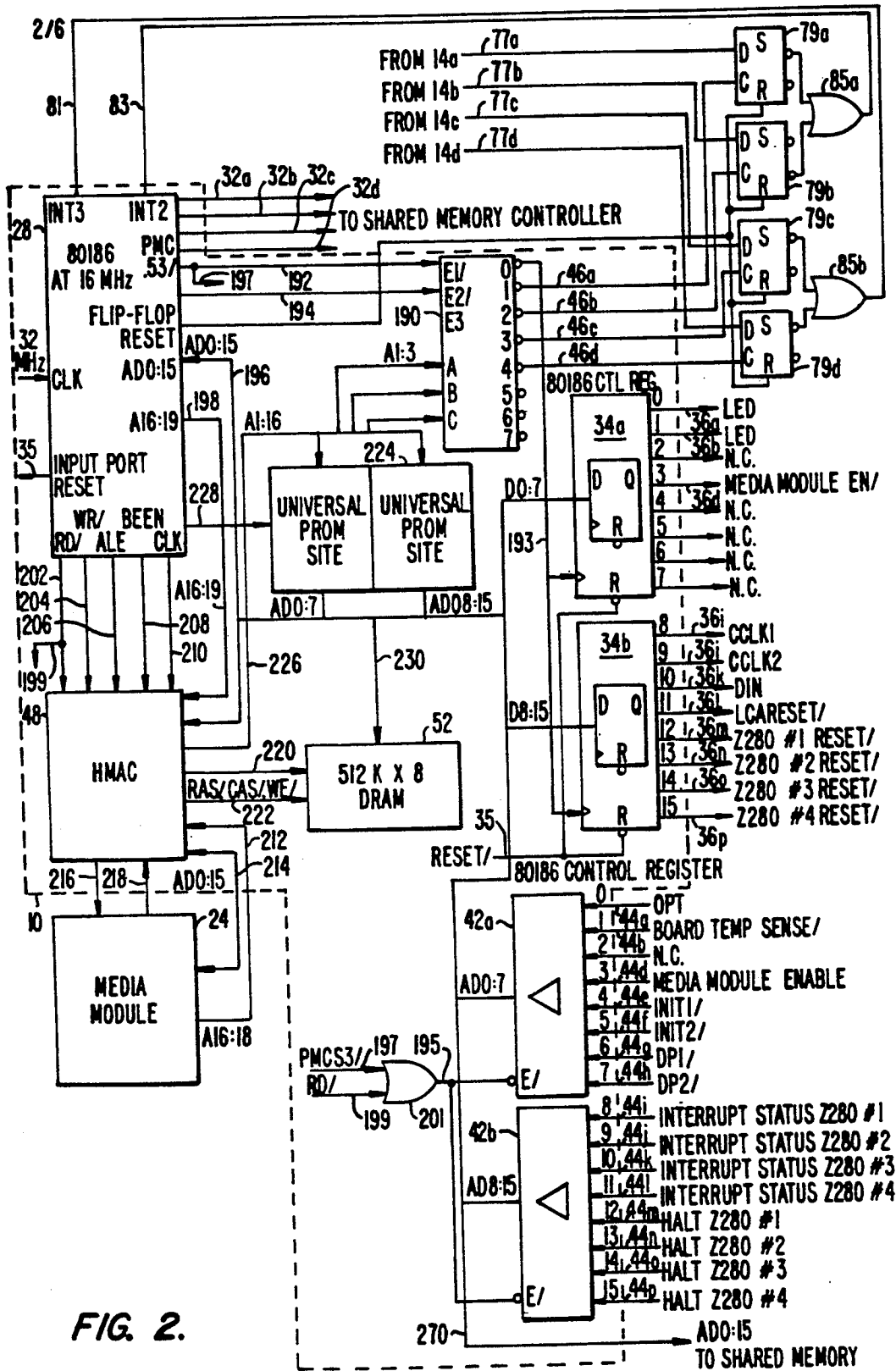


FIG. 2.

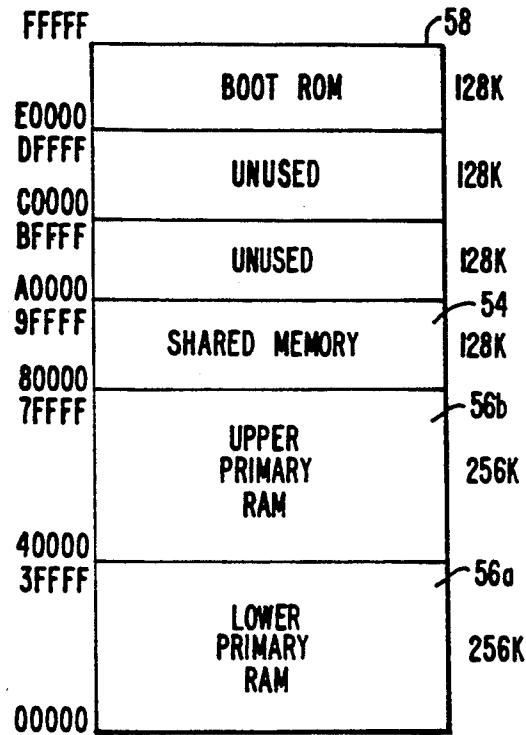


FIG. 3.

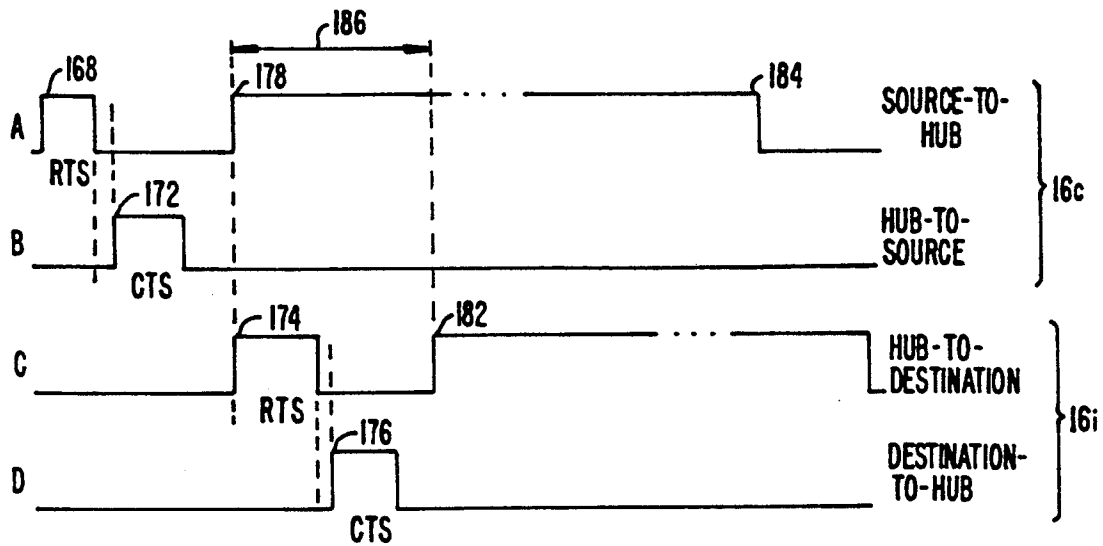


FIG. 9.

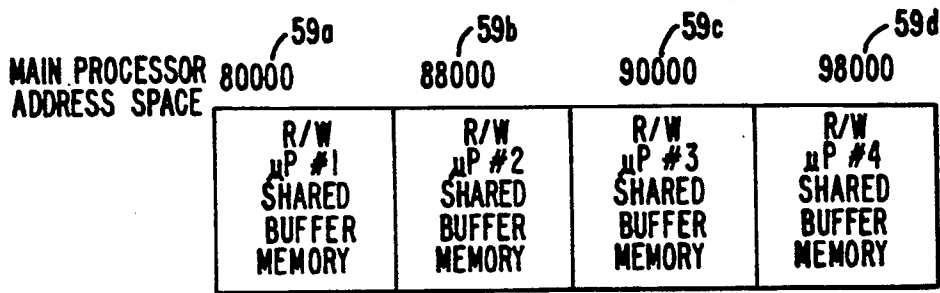


FIG. 4A.

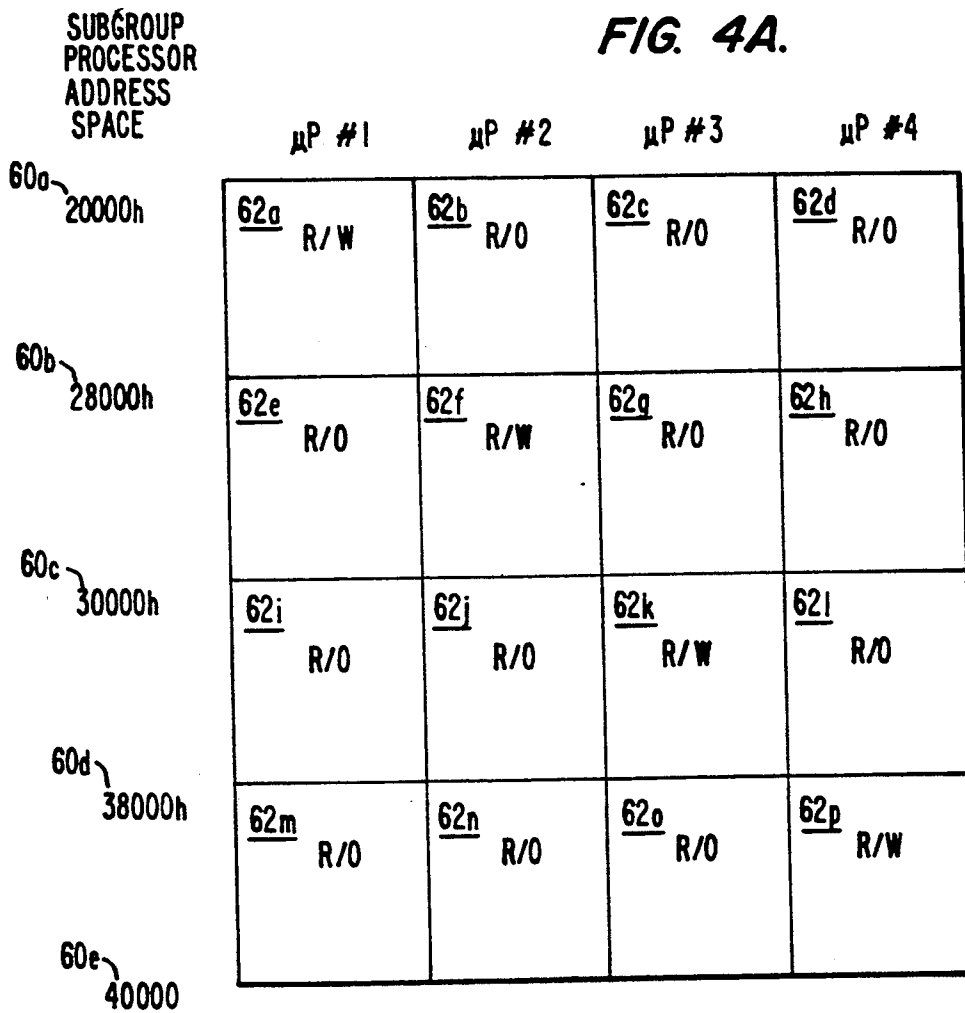


FIG. 4B.

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.