

[54] DIGITAL SIMULCAST TRANSMISSION SYSTEM

[75] Inventors: Mark L. Witsaman; Roger E. Benz; David W. Glessner; Joel R. Crowley-Dierks, all of Quincy, Ill.

[73] Assignee: Glenayre Electronics, Ltd., Vancouver, Canada

[21] Appl. No.: 931,789

[22] Filed: Aug. 17, 1992

[51] Int. Cl.⁵ H04M 11/00; H04B 1/00

[52] U.S. Cl. 379/57; 455/51.2

[58] Field of Search 455/16, 51.2, 56.1, 455/72, 12.1, 13.2, 13.1; 379/56, 57, 1, 9, 27, 111, 279; 340/825.44; 375/107, 38, 100; 370/95.1, 95.3, 94.1, 94.2, 84

[56] References Cited

U.S. PATENT DOCUMENTS

4,709,402	11/1987	Akerberg	455/51.2
4,849,993	7/1989	Johnson et al.	375/108
4,850,032	7/1989	Freeburg	455/51.2
4,968,966	11/1990	Jasinski et al.	340/825.44
5,023,900	6/1991	Taylor et al.	379/59
5,060,240	10/1991	Erickson et al.	455/51.2
5,077,759	12/1991	Nakahara	345/107
5,090,025	2/1992	Marshall et al.	375/4
5,153,874	10/1992	Kohno	375/38
5,162,790	11/1992	Jasinski	455/16
5,220,676	6/1993	LoGalbo et al.	455/13.2
5,257,404	10/1993	Goreham et al.	455/51.2

FOREIGN PATENT DOCUMENTS

0228237 9/1989 Japan 375/107
0470027 3/1992 Japan 375/107

Primary Examiner—Curtis Kuntz

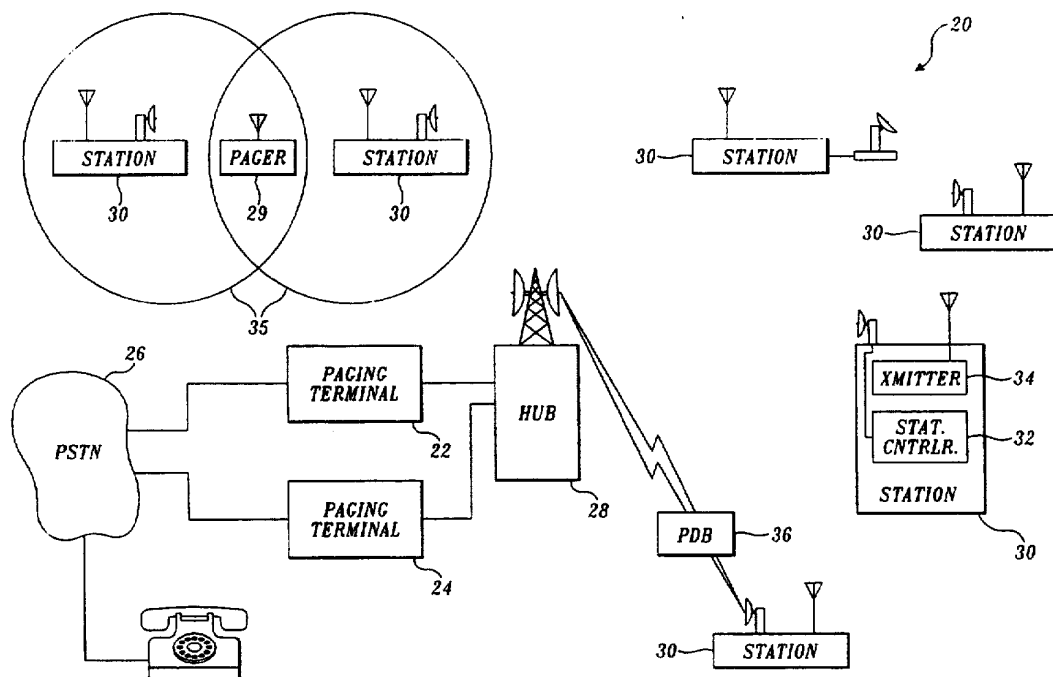
Assistant Examiner—Michael B. Chernoff

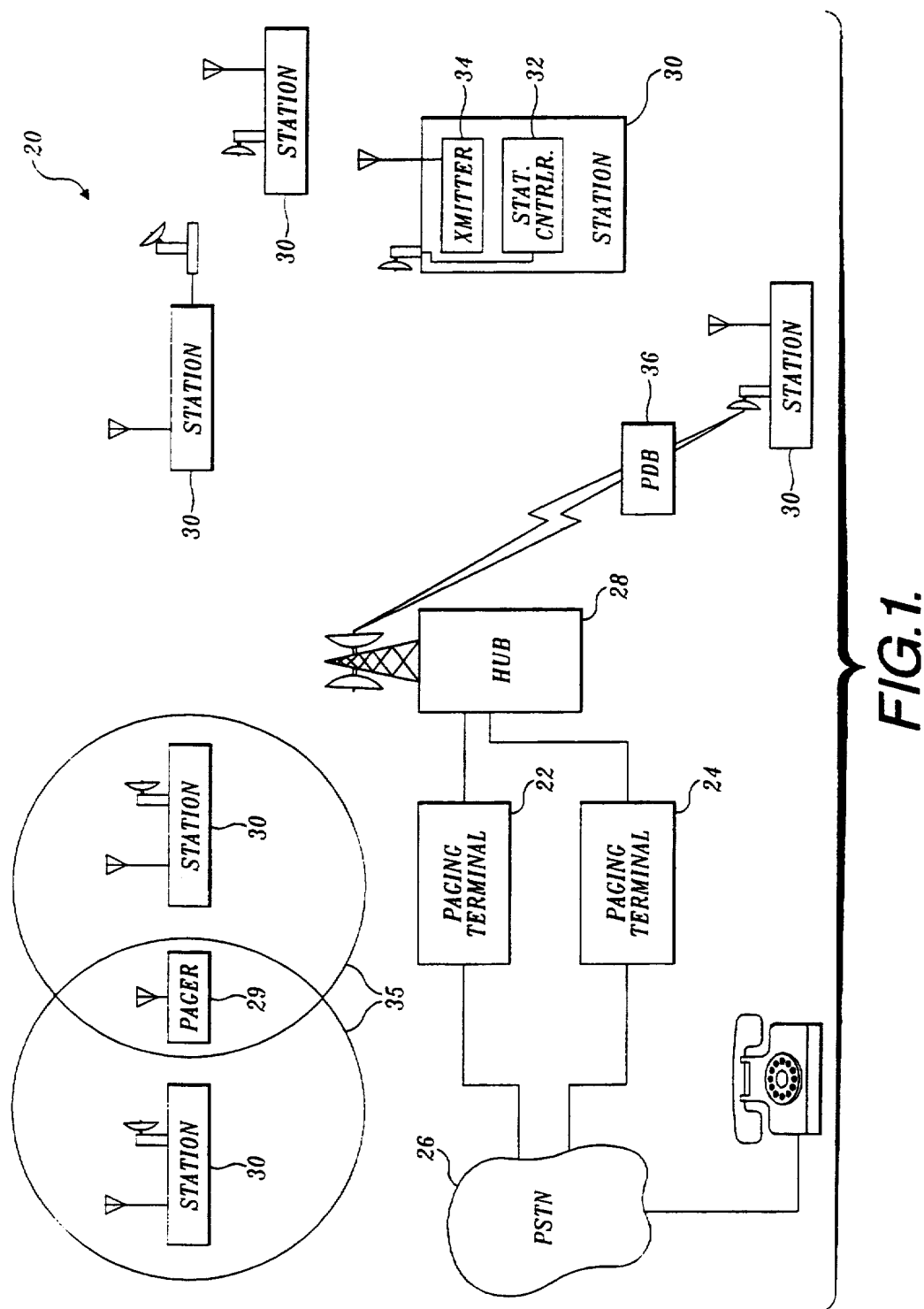
Attorney, Agent, or Firm—Christensen, O'Connor, Johnson & Kindness

[57] ABSTRACT

A simulcast system for broadcasting the same signal for a number of spaced-apart broadcast sites is disclosed. The system (20) of this invention includes a hub (28) adapted to receive the signal to be simulcast and a number of stations (30) that actually broadcast the signal. The hub places the digital signal packets referred to as PDBs (36). As part of the signal packetization process, the hub evaluates the rate at which the signals should be broadcast and assigns a start time at which the signals should be broadcast; this information is attached to the PDBs. After a PDB is created it is forwarded to the stations over a link channel. Each station includes a station controller (32) and a station transmitter (34). The station controller, upon receiving a PDB, forwards the signal therein to the transmitter at the start time indicated and at the appropriate broadcast rate. All of the stations transmitting the signals contained within a single PDB do so based on the start time and broadcast rate information contained in that PDB. Consequently, each station broadcasts the same signals at the same time and at the same rate so as to ensure their simultaneous transmission.

47 Claims, 21 Drawing Sheets





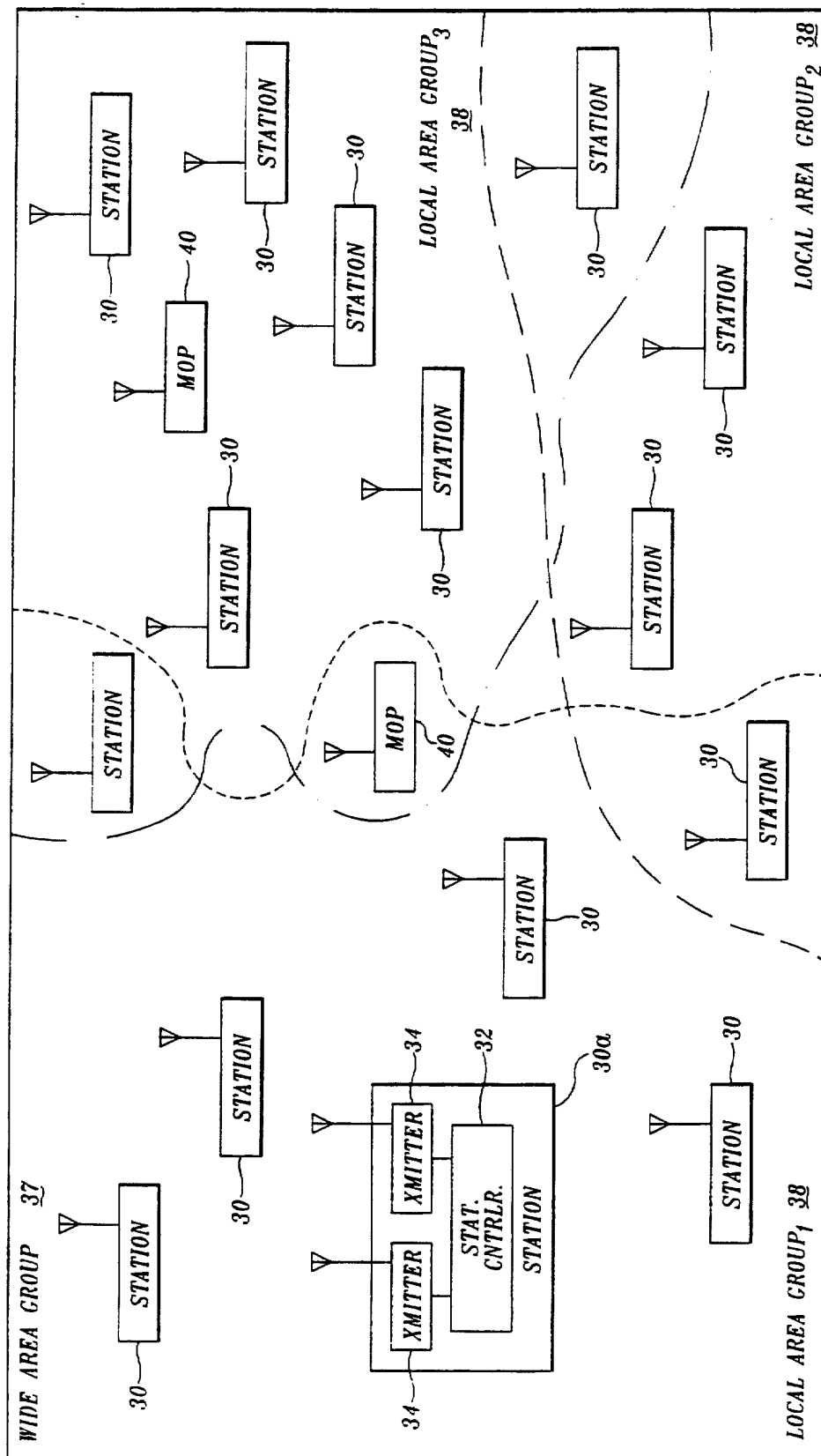


FIG. 2.

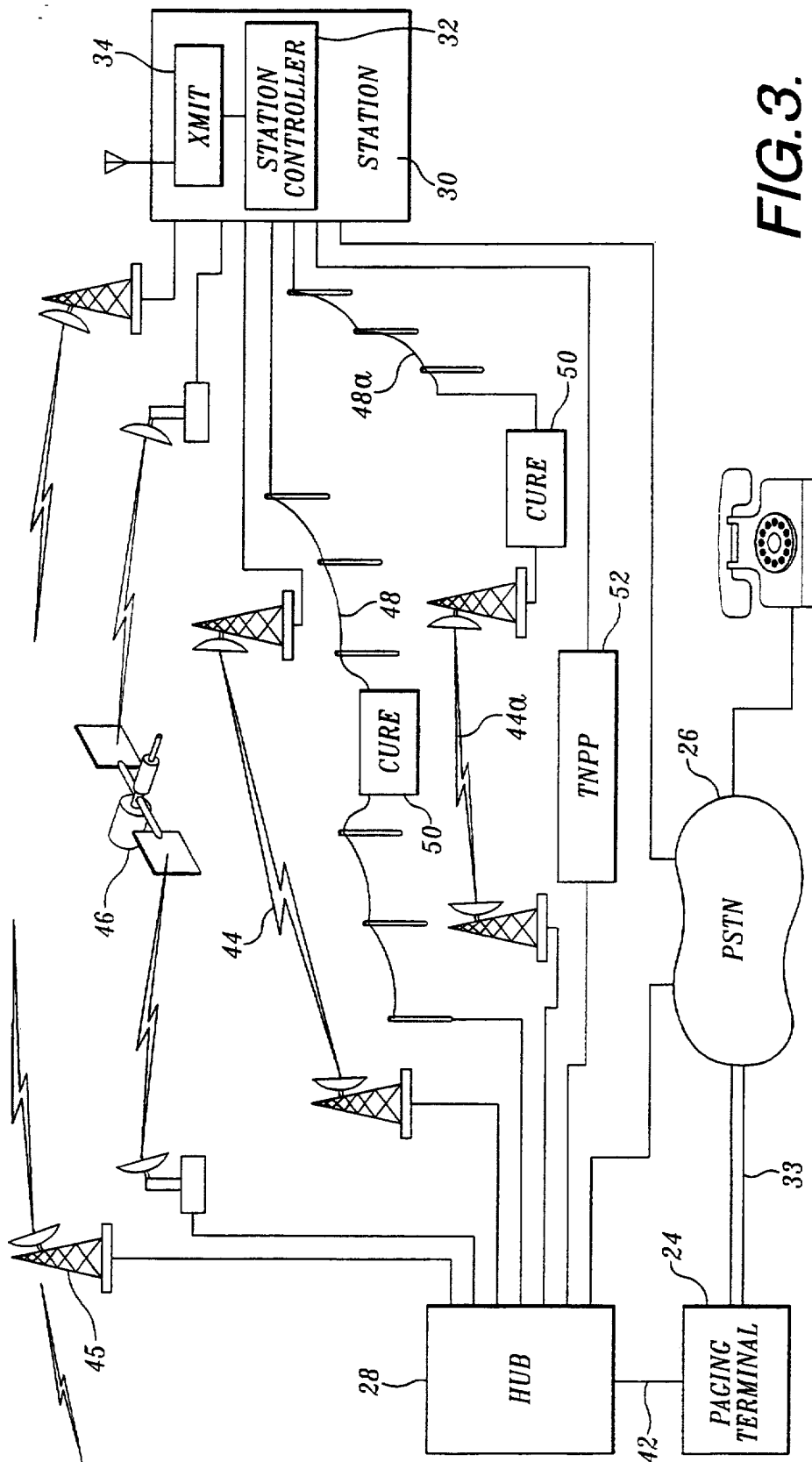
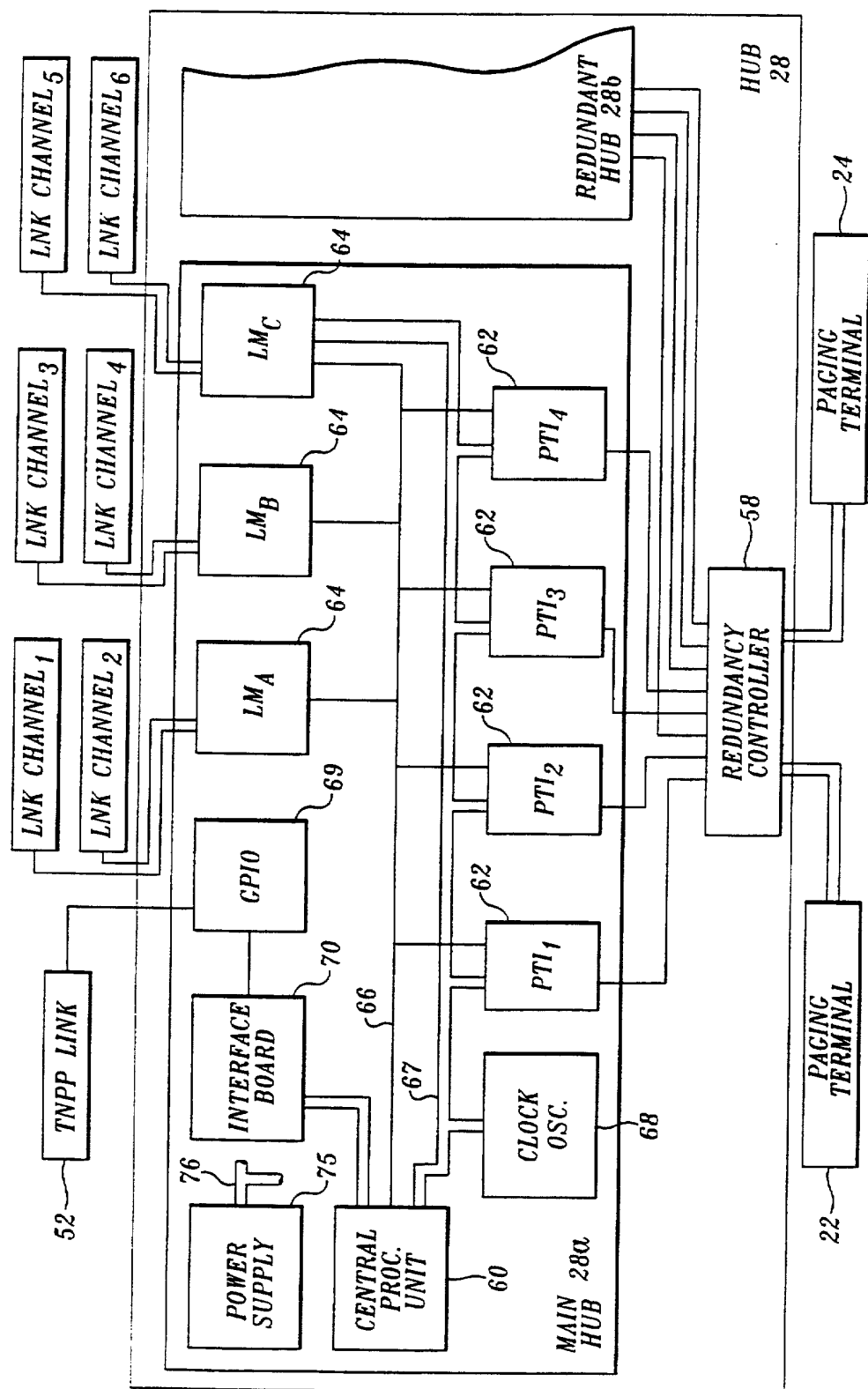


FIG. 3.





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.