

EXHIBIT D

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

(10) **Patent No.:** US **6,177,843 B1**
 (45) **Date of Patent:** Jan. 23, 2001

- (54) **OSCILLATOR CIRCUIT CONTROLLED BY PROGRAMMABLE LOGIC**
- (75) Inventors: **Richard Chou**, Palo Alto; **Pidugu L. Narayana**, Sunnyvale; **Paul H. Scott**, San Jose, all of CA (US)
- (73) Assignee: **Cypress Semiconductor Corp.**, San Jose, CA (US)

4,943,788	*	7/1990	Laws et al.	331/11
4,996,444		2/1991	Thomas et al.	307/269
5,138,281		8/1992	Boudewijns	331/1 A
5,254,955		10/1993	Saeki et al.	328/155
5,406,592		4/1995	Baumert	375/376
5,629,651	*	5/1997	Mizuno	331/34
5,694,087		12/1997	Ferraiolo et al.	331/11
5,699,020	*	12/1997	Jefferson	331/17

* cited by examiner

(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

Primary Examiner—David Mis
 (74) *Attorney, Agent, or Firm*—Christopher P. Maiorana, P.C.

(21) Appl. No.: **09/320,057**

(22) Filed: **May 26, 1999**

(57) **ABSTRACT**

- (51) **Int. Cl.**⁷ **H03L 7/08**; H03L 7/095
- (52) **U.S. Cl.** **331/25**; 331/1 A; 331/16; 331/DIG. 2; 327/156; 327/159
- (58) **Field of Search** 331/1 A, 10, 11, 331/16, 17, 18, 25, DIG. 2; 327/2-12, 39-49, 156-159

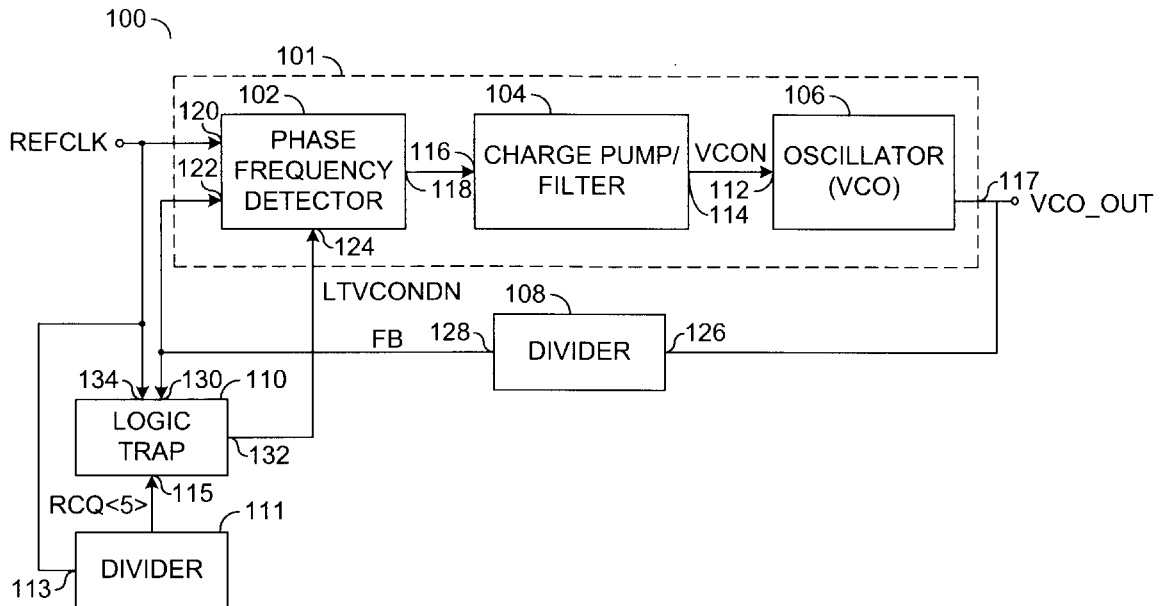
An apparatus comprising an oscillator circuit and a logic circuit. The oscillator circuit may be configured to present an output signal having a frequency in response to (i) a reference signal, (ii) a control signal and (iii) the output signal. The logic circuit may be configured to present the control signal in response to (i) the output signal and (ii) the reference signal. In one example, the logic circuit may disable the oscillator when the output signal oscillates outside a predetermined range.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,646,031 2/1987 Fast et al. 331/1 A

11 Claims, 6 Drawing Sheets



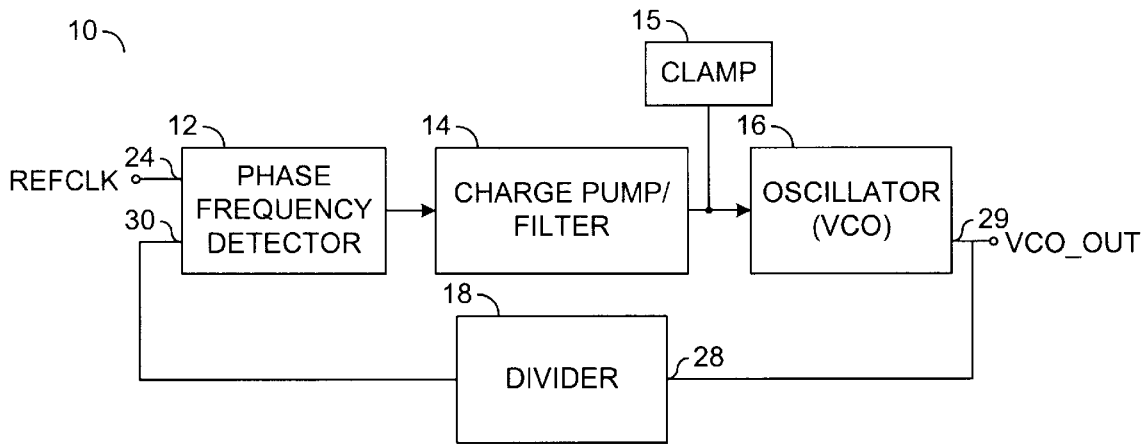


FIG. 1

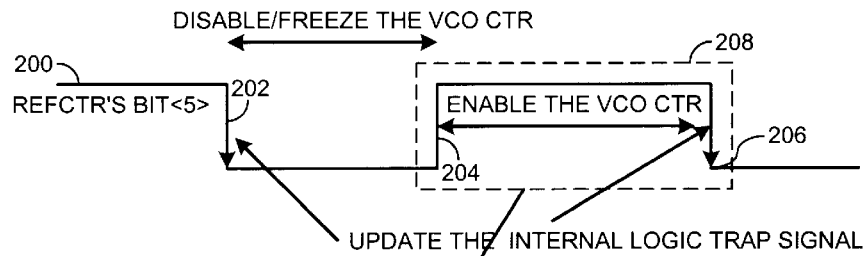


FIG. 5

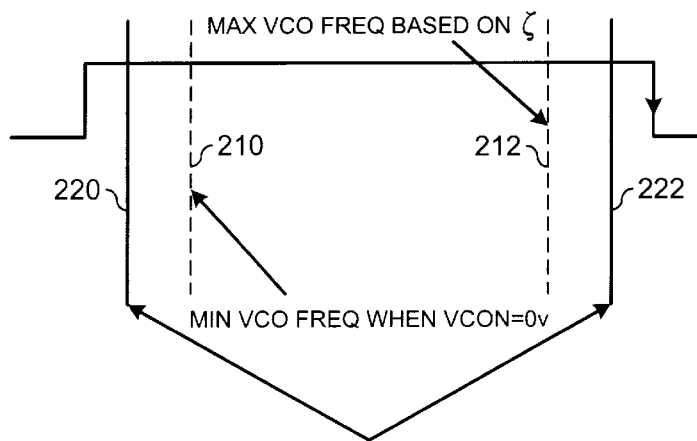


FIG. 6

LOGIC TRAPS MIN AND MAX PROGRAM THRESHOLDS

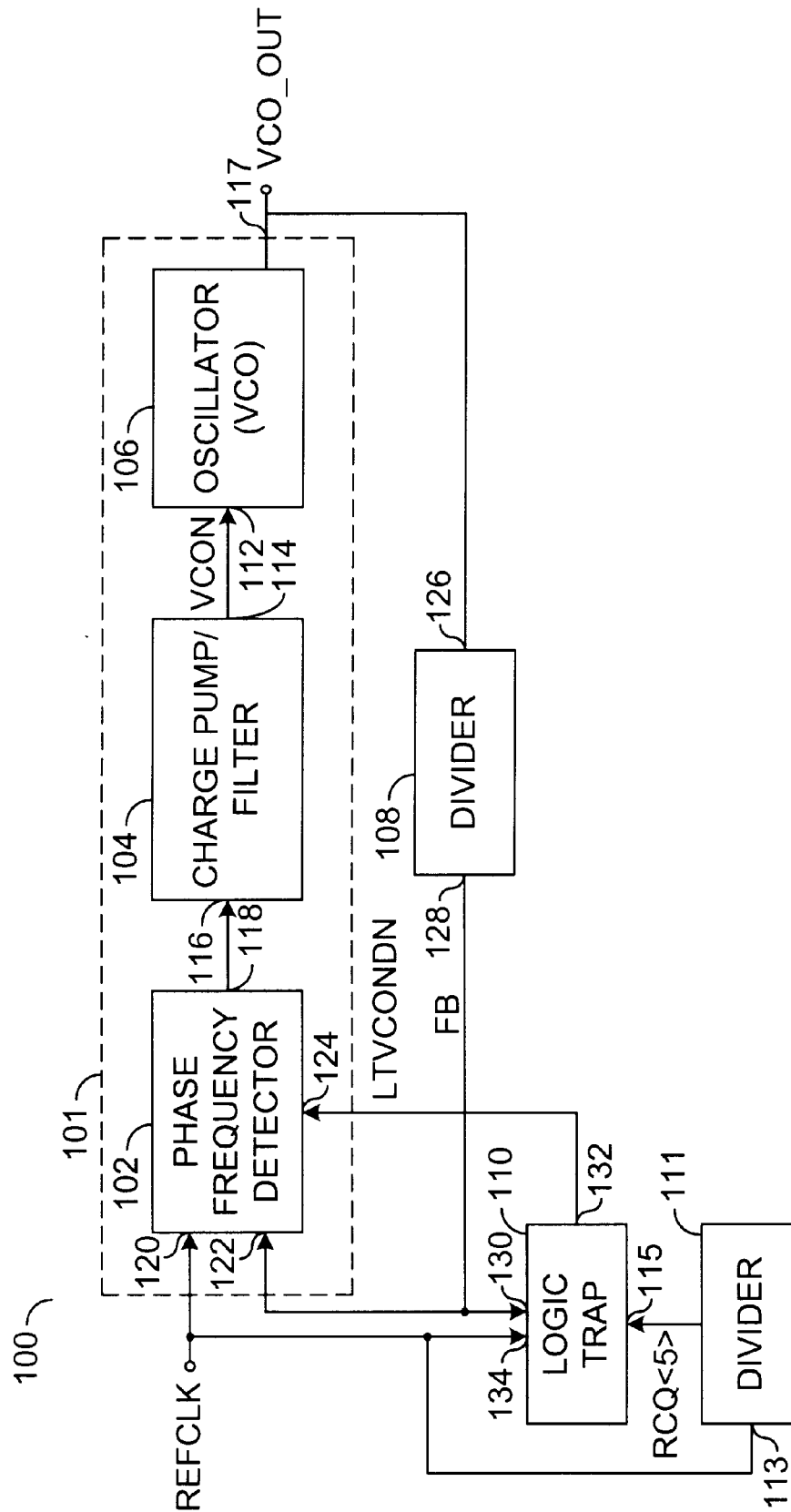


FIG. 2

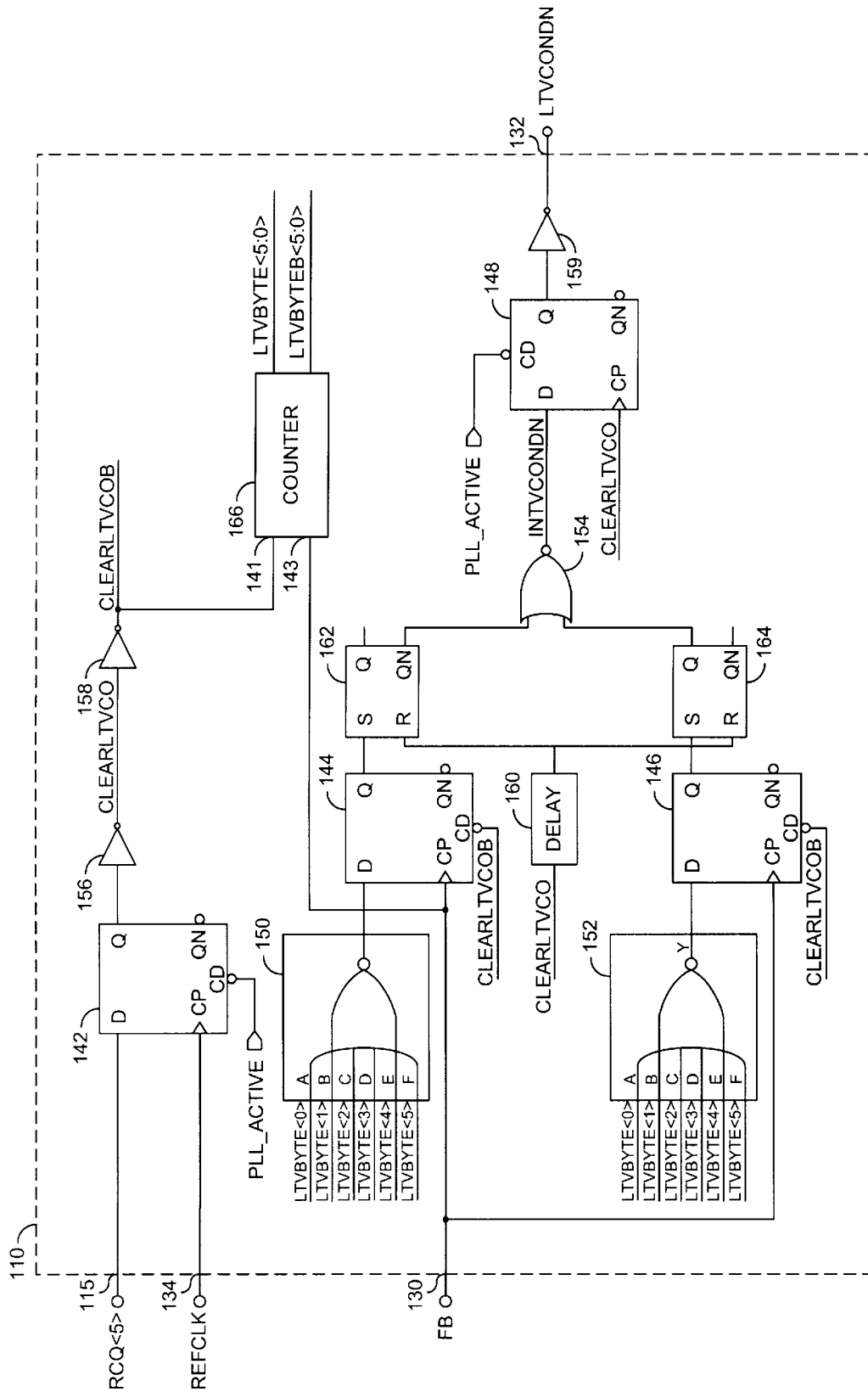


FIG. 3

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.