



US006212360B1

(12) **United States Patent**
Fleming, III et al.

(10) **Patent No.:** **US 6,212,360 B1**
(45) **Date of Patent:** **Apr. 3, 2001**

(54) **METHODS AND APPARATUS FOR CONTROLLING EARTH-STATION TRANSMITTED POWER IN A VSAT NETWORK**

(75) Inventors: **Robert F. Fleming, III**, Derwood, MD (US); **William A. Check**, Great Falls, VA (US); **Joseph A. Chisholm**, Manassas, VA (US); **Brian J. Glinsman**, Herndon, VA (US); **David B. Kim**, Great Falls, VA (US); **Ronald L. Kronz**, Fairfax, VA (US)

4,567,485	*	1/1986	Oshima et al.	343/358
4,697,187	*	9/1987	Ohno et al.	342/358
4,731,866	*	3/1988	Muratani et al.	455/9
4,752,967	*	6/1988	Bustamante et al.	455/12
4,896,369	*	1/1990	Adams, Jr. et al.	455/12
4,941,199	*	7/1990	Saam	455/10
5,060,292	*	10/1991	Ayukawa et al.	455/52
5,257,029	*	10/1993	Miyo	342/352
5,606,551	*	2/1997	Kartalopoulos	370/406
5,619,525	*	4/1997	Wiedeman et al.	375/200
5,708,966	*	1/1998	Al-Dhahir et al.	455/13.4
5,787,336	*	7/1998	Hirschfield et al.	455/13.4

* cited by examiner

(73) Assignee: **GE Capital Spacenet Services, Inc.**, McLean, VA (US)

Primary Examiner—William G. Trost
Assistant Examiner—Charles Craver

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

(74) *Attorney, Agent, or Firm*—Jones Volentine, L.L.C.

(21) Appl. No.: **09/050,972**

(57) **ABSTRACT**

(22) Filed: **Mar. 31, 1998**

A method is shown for providing stable communication between a hub earth-station and a VSAT earth-station by regulating the power of signals transmitted via a satellite. In this method, the hub receives a beacon signal from the satellite and a previous outbound signal. The hub then regulates the power of an outbound signal transmitted by the hub to VSAT via the satellite, based on either the beacon signal or the previous outbound signal. The hub then sends a current outbound signal, including signal data and parameter data to the VSAT via the satellite. The VSAT receives the current outbound signal and determines a number of signal properties pertaining to the current outbound signal. The VSAT then regulates the power of an inbound signal transmitted by the VSAT to the hub via the satellite, based on the signal properties, the parameter data, and a set of reference data.

Related U.S. Application Data

(60) Provisional application No. 60/042,835, filed on Apr. 9, 1997.

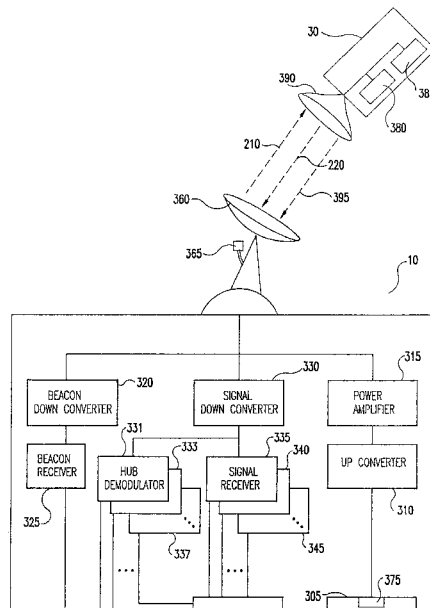
(51) **Int. Cl.**⁷ **H04B 7/185**
(52) **U.S. Cl.** **455/13.4; 455/427; 455/232.1**
(58) **Field of Search** 342/358, 352; 455/10, 12.1, 13.4, 13.2, 427, 466, 68, 232.1; 370/320; 375/202

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,004,224 * 1/1977 Arens et al. 325/2

10 Claims, 6 Drawing Sheets



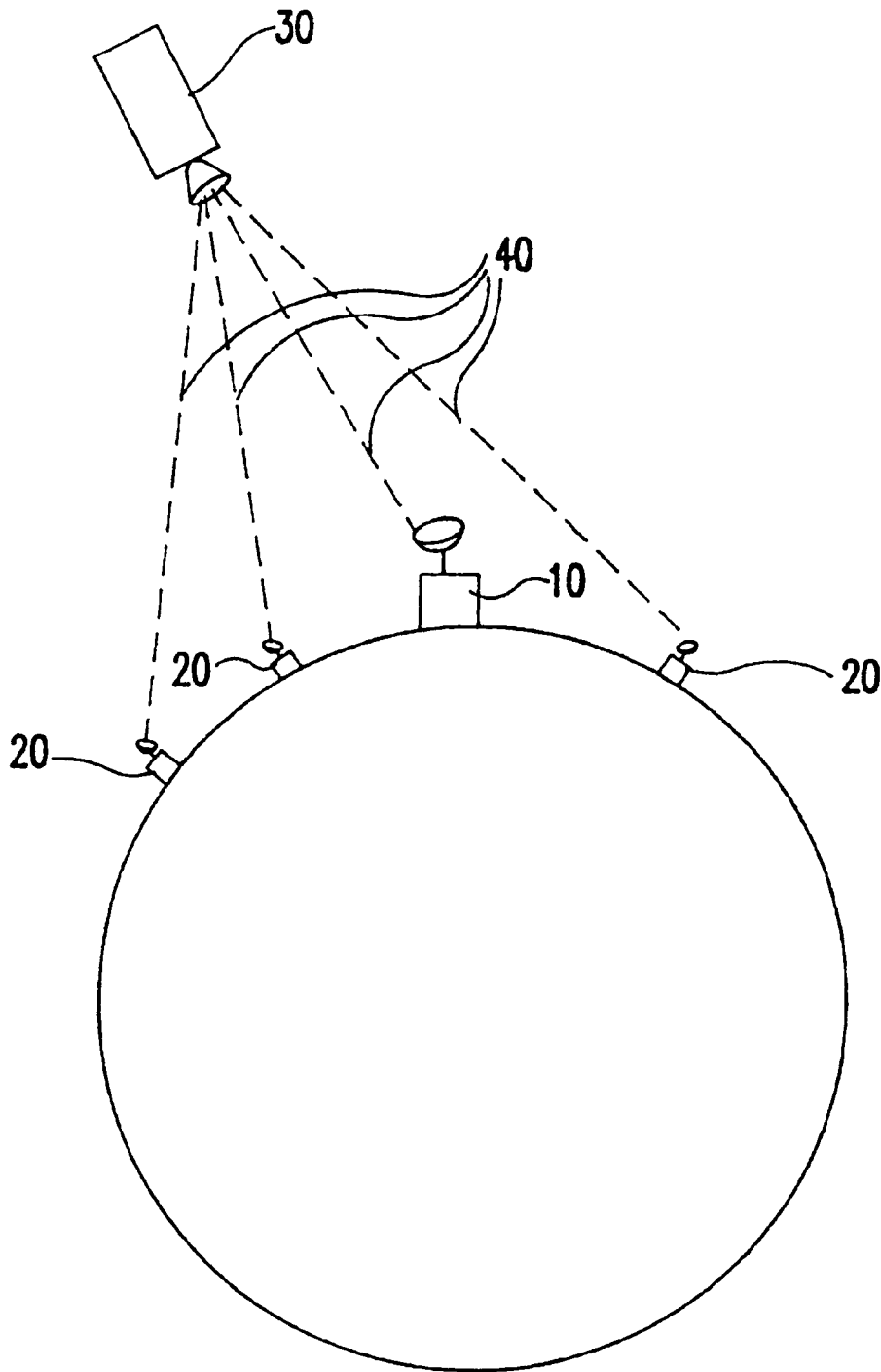


FIG. 1

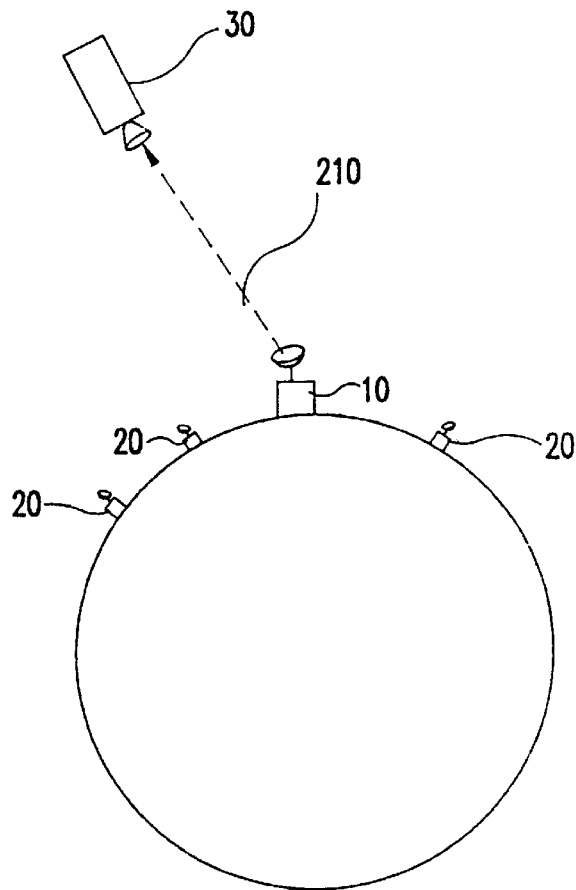


FIG. 2A

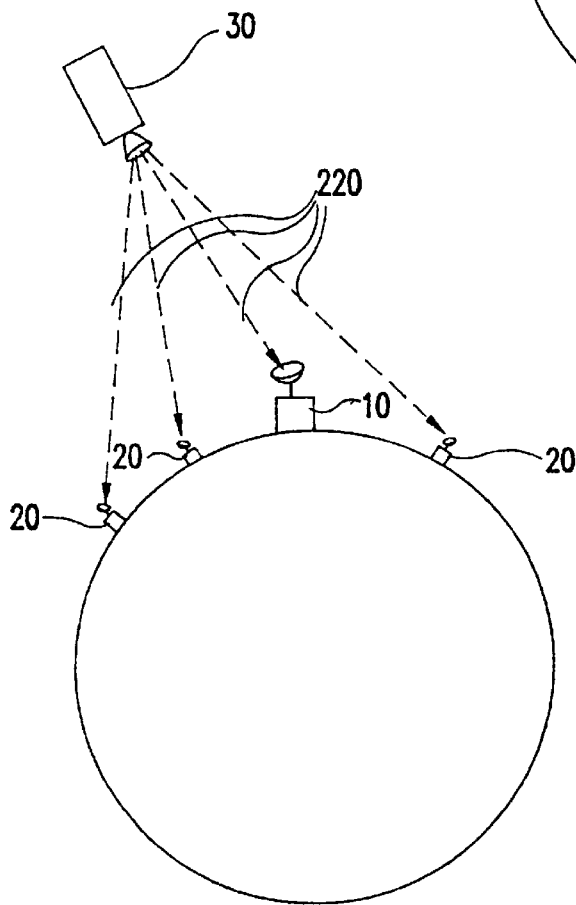


FIG. 2B

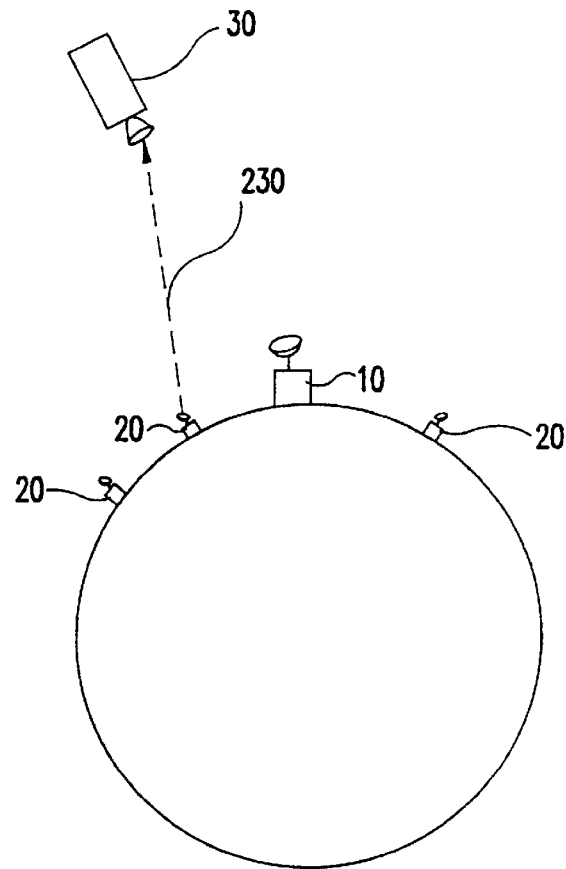


FIG. 2C

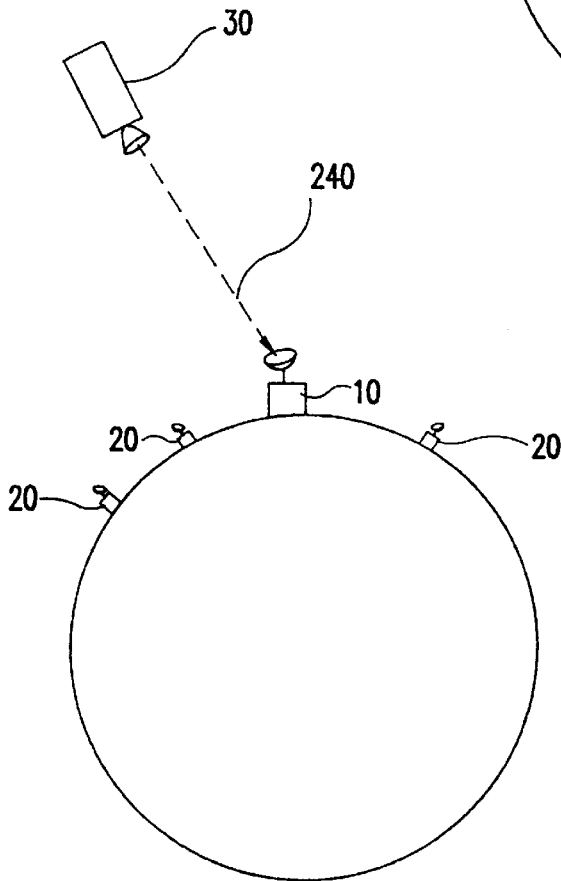


FIG. 2D

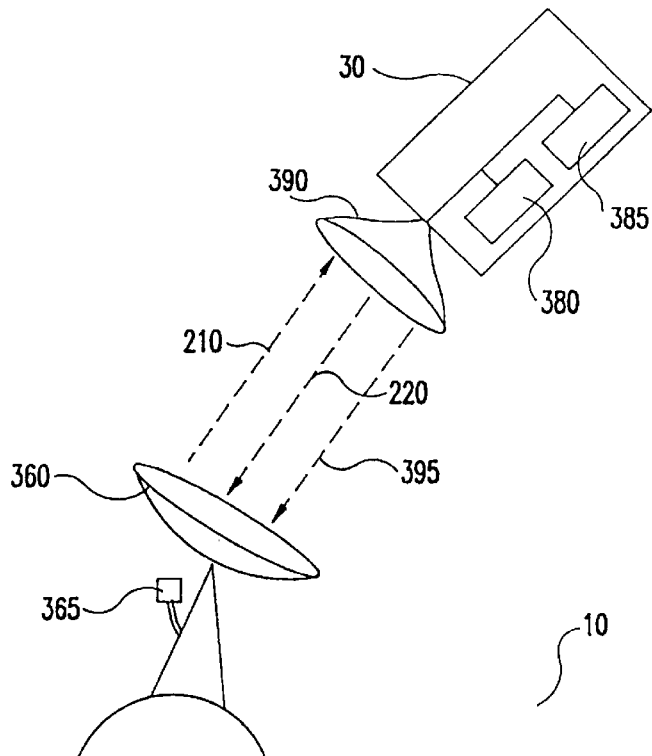
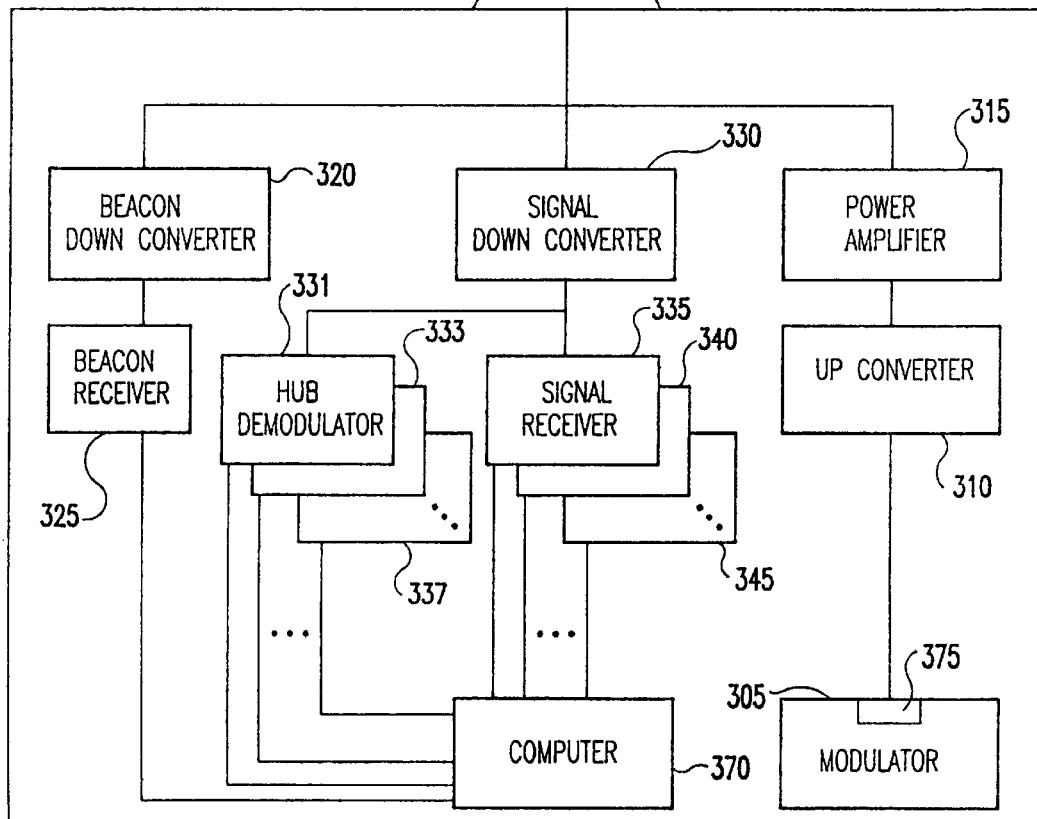


FIG. 3



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.