US005258995A

United States Patent [19]

Su et al.

[11] Patent Number: 5,258,995

[45] Date of Patent: Nov. 2, 1993

[54] **WIRELESS COMMUNICATION SYSTEM**

[75] Inventors: **Chun-Meng Su**, Lafayette; **Saman Behtash**, Berkeley; **Keith Jarett**, Oakland; **Huihung Lu**, Danville; **Christopher Flores**, Oakland; **David G. Messerschmitt**, Moraga, all of Calif.

[73] Assignee: **Teknekron Communications Systems, Inc.**, Berkeley, Calif.

[21] Appl. No.: **789,292**

[22] Filed: **Nov. 8, 1991**

[51] **Int. Cl.**[5] **H04K 1/00**

[52] **U.S. Cl.** **375/1**

[58] **Field of Search** 375/1; 380/34

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,271,524	6/1981	Goodman et al.	375/1
4,644,560	2/1987	Torre et al. .	
4,703,474	10/1987	Foschini et al.	375/1
4,783,844	11/1988	Higashiyma et al. .	
4,905,221	2/1990	Ichiyoshi .	
5,099,493	3/1992	Zeger et al.	375/1
5,103,459	4/1992	Gilhousen et al.	375/1
5,128,959	7/1992	Bruckert	375/1
5,136,612	8/1992	Bi	375/1
5,150,377	9/1992	Vannucci	375/1
5,151,919	9/1992	Dent	375/1
5,161,168	11/1992	Schilling	375/1
5,164,958	11/1992	Omura	375/1
5,193,101	3/1993	McDonald et al.	375/1

OTHER PUBLICATIONS

38th IEEE Vehicular Technology Conference, Jun. 1988, "Variable-Rate Sub-Band Speech Coding and Matched Channel Coding for Mobile Radio Channels", by J. Hagensuer, N. Seshandri C-E. W. Sundberg, pp. 139-146.

IEEE Transactions on Communications, vol. 38, No. 7, Jul. 1990, "The Performance of Rate-Compatible Punctured Convolutional Codes for Digital Mobile Radio", C.-E. W. Sundberg, J. Hagenauer, N. Seshandri, pp. 966-980.

IEEE Transactions on Communications, vol. COM-32, No. 3, Mar. 1984, "High-Rate Punctured Convolutional Codes for Soft Decision Viterbi Decoding", Y. Yasuda, K. Kashiki, Y. Hirata, pp. 315-319.

IEEE Transactions on Communications, vol. 36, No. 4, Apr. 1988, "Rate-Compatible Punctured Convolutional Codes (RCPC Codes) and their Applications", J. Hagenauer, pp. 389-400.

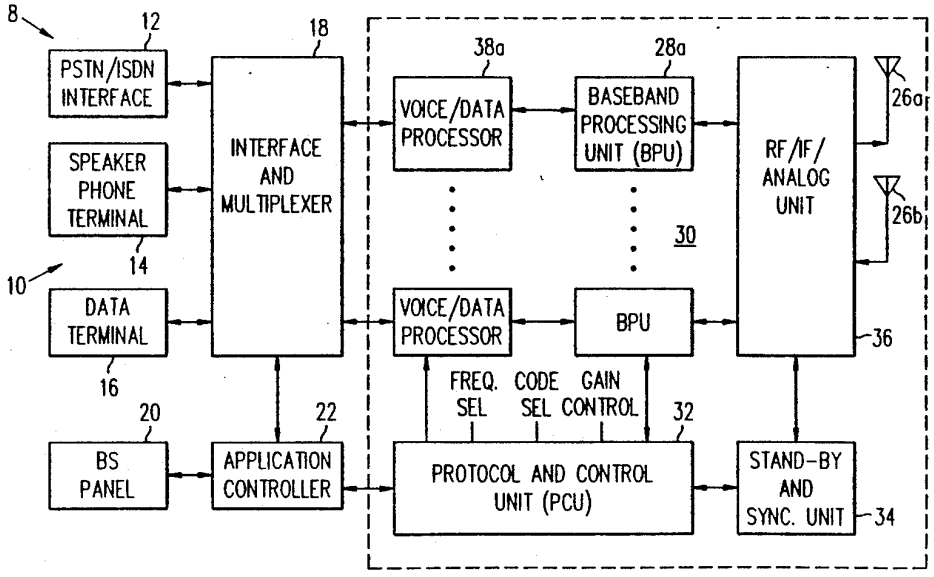
Primary Examiner—Salvatore Cangialosi

Attorney, Agent, or Firm—Limbach & Limbach

[57] **ABSTRACT**

In the present invention a wireless communication system is disclosed. A base unit communicates with a remote unit. The system comprises means for transmitting, using CDMA, between the base unit and the remote unit, in one of a plurality of frequencies channels selected. In one period of time, the base unit transmits and in another period of time, different from the one period, the remote unit transmits. Further, the system comprises means for changing the one frequency channel selected to another frequency channel, different from the one frequency channel, in response to interference in the one frequency channel. Thus, communication between the base unit and the remote unit is then affected over the another frequency channel.

20 Claims, 7 Drawing Sheets



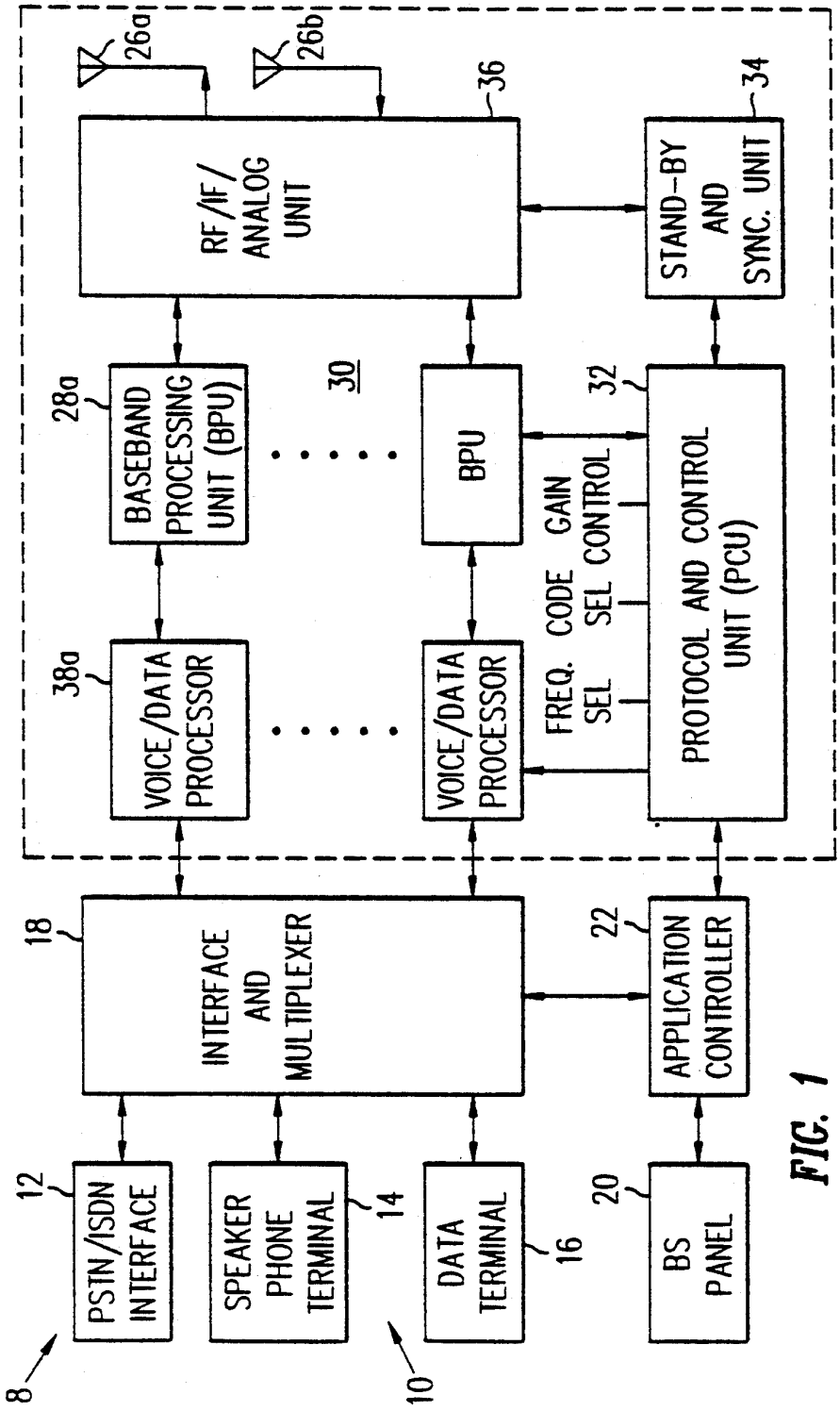


FIG. 1

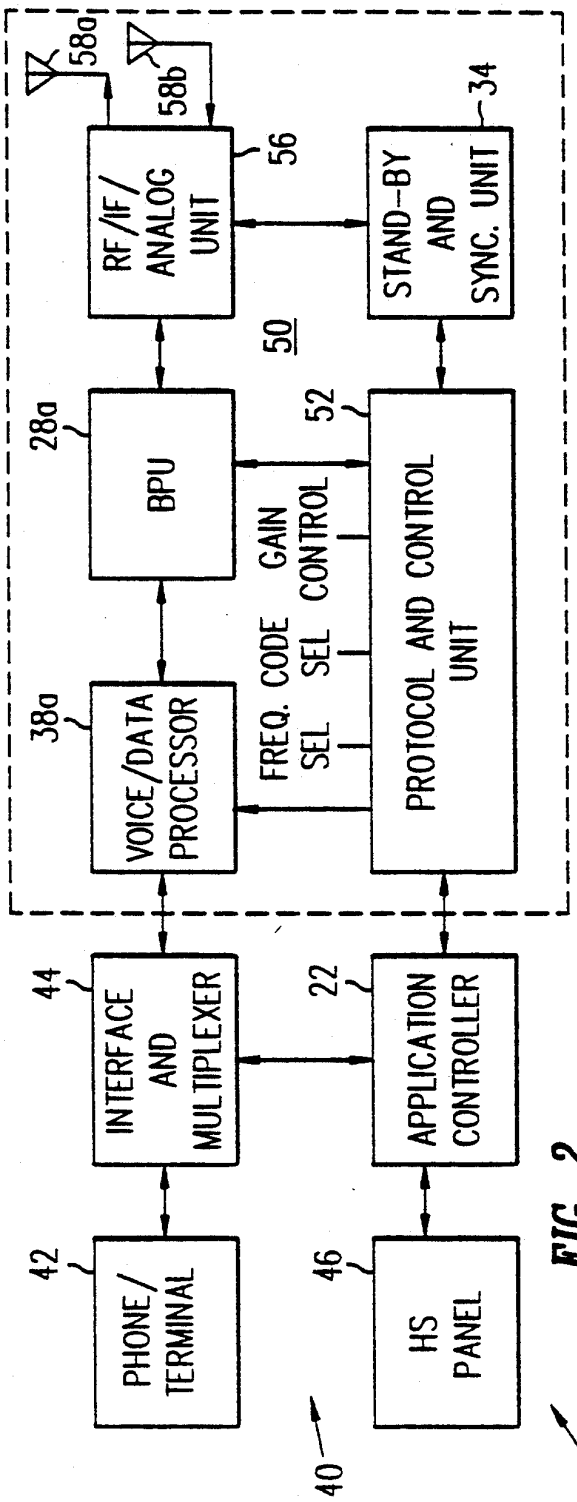


FIG. 2

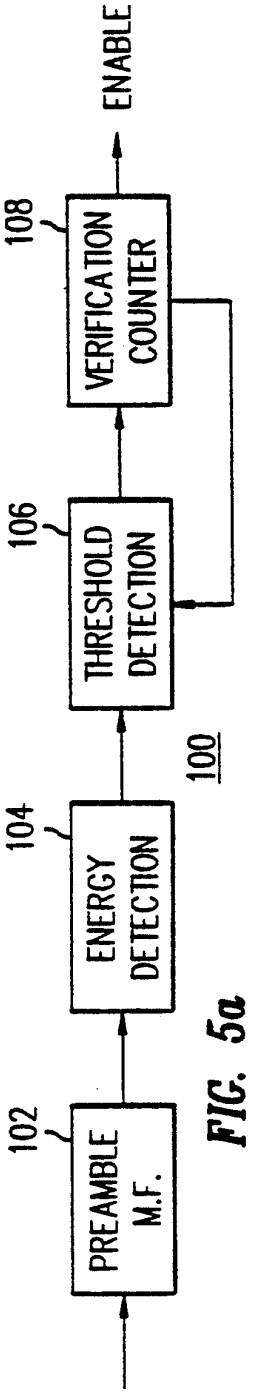


FIG. 5a

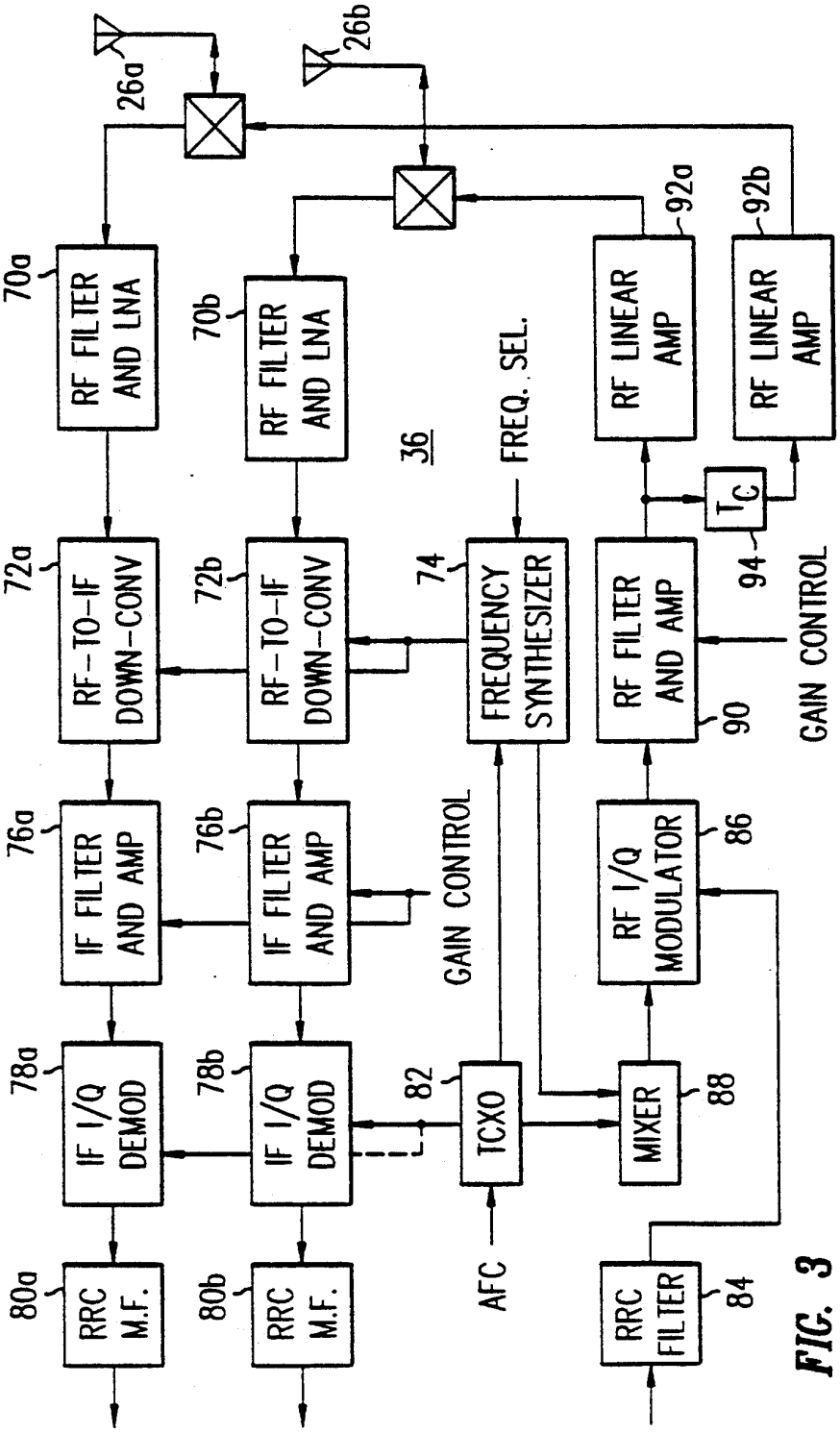


FIG. 3

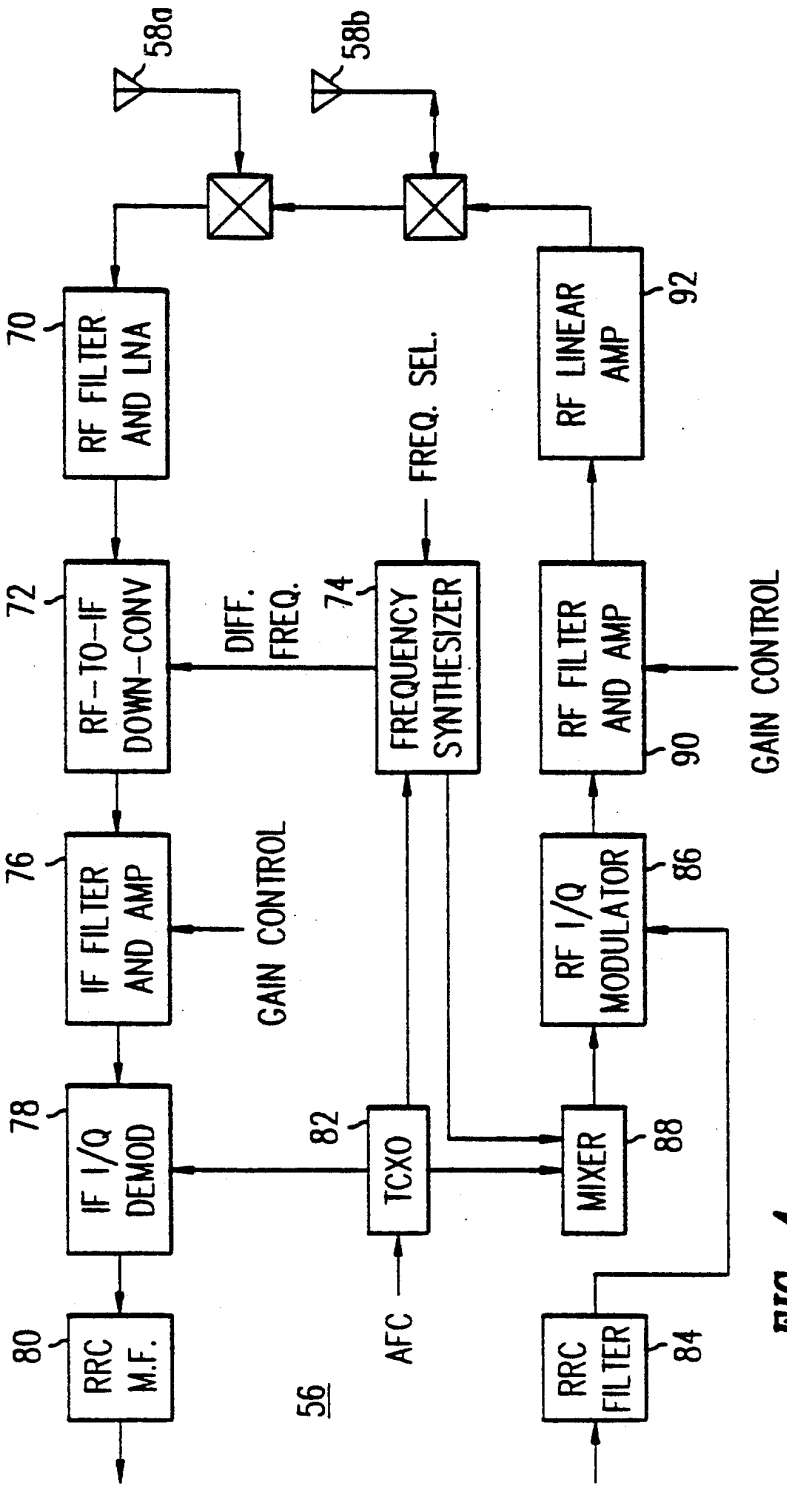


FIG. 4

DOCKET ALARM

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.