



US008072916B2

(12) **United States Patent**
Dateki

(10) **Patent No.:** **US 8,072,916 B2**
(45) **Date of Patent:** **Dec. 6, 2011**

(54) **MOBILE WIRELESS COMMUNICATION SYSTEM AND WIRELESS COMMUNICATION APPARATUS USING TRANSMISSION POWER CONTROL INFORMATION**

FOREIGN PATENT DOCUMENTS

EP	1 206 047	5/2002
EP	1 351 411	10/2003
JP	11-145901	5/1999

(75) Inventor: **Takashi Dateki**, Kawasaki (JP)

(73) Assignee: **Fujitsu Limited**, Kawasaki (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 296 days.

(21) Appl. No.: **11/114,817**

(22) Filed: **Apr. 26, 2005**

(65) **Prior Publication Data**

US 2006/0171342 A1 Aug. 3, 2006

(30) **Foreign Application Priority Data**

Jan. 14, 2005 (JP) 2005-007508

(51) **Int. Cl.**
H04B 7/185 (2006.01)

(52) **U.S. Cl.** **370/318; 370/332; 370/333; 370/342; 370/441**

(58) **Field of Classification Search** 455/69, 455/70, 88, 522; 370/342, 441, 318, 332, 370/333

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,374,118	B1 *	4/2002	Toskala et al.	455/522
6,611,508	B1	8/2003	Abe	
6,647,005	B1 *	11/2003	Cao et al.	370/342
6,980,808	B1 *	12/2005	Smith	455/450
2002/0018527	A1 *	2/2002	Vandelaar et al.	375/259
2003/0081586	A1 *	5/2003	Malladi et al.	370/345
2004/0066772	A1 *	4/2004	Moon et al.	370/342
2006/0221809	A1 *	10/2006	Malladi et al.	370/206

OTHER PUBLICATIONS

European Search Report dated Mar. 21, 2006.

Ari Hottinen et al. Multi-Antenna Transceiver Techniques for 3G and Beyond. 2003.

3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Physical Channels and mapping of transport channels onto physical channels (FDD) Release 5.

(Continued)

Primary Examiner — Olumide T Ajibade Akonai

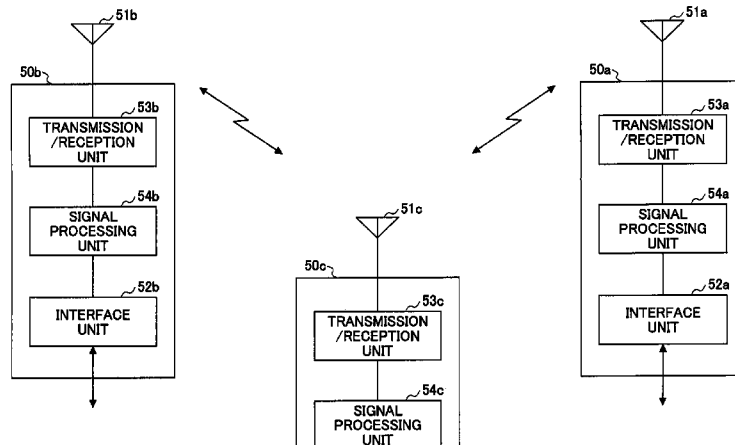
Assistant Examiner — Jaime Holliday

(74) *Attorney, Agent, or Firm* — Katten Muchin Rosenman LLP

(57) **ABSTRACT**

A mobile wireless communication system including a wireless communication apparatus and a counterpart wireless communication apparatus is provided, the system establishing wireless communication between the wireless communication apparatus and the counterpart wireless communication apparatus by multiplexing plural channels including at least a traffic channel for transmitting a packet, a control channel for transmitting control information for receiving the packet, and a channel for transmitting information including transmission power control information. The wireless communication apparatus includes a transmission unit that transmits the transmission control information to the counterpart wireless communication apparatus via the channel for transmitting information including transmission power control information at intervals of a prescribed period that is longer than a length of the packet, and transmits the transmission power control information via the control channel when the packet is being transmitted via the traffic channel.

19 Claims, 6 Drawing Sheets



OTHER PUBLICATIONS

3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and Channel Coding (FDD) Release 5.

3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Spreading and modulation (FDD) (Release 5).

3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Physical Layer procedures (FDD) (Release 5).

TSG-RAN Working Group I meeting #34 031073 Fractional Dedicated Physical Channel, Discussion on Multiplexing Options, Oct. 2003.

* cited by examiner

FIG. 1

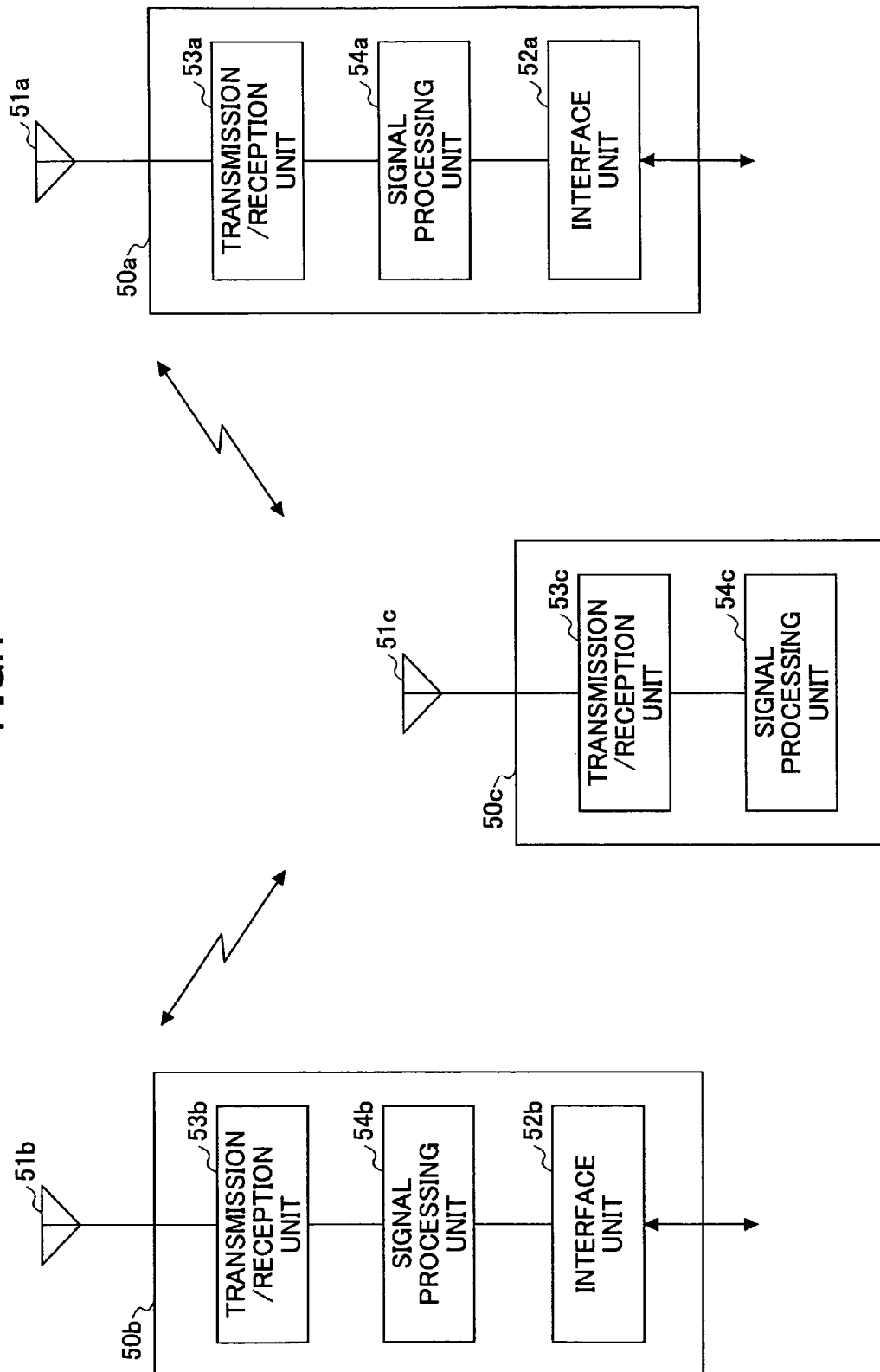


FIG. 2

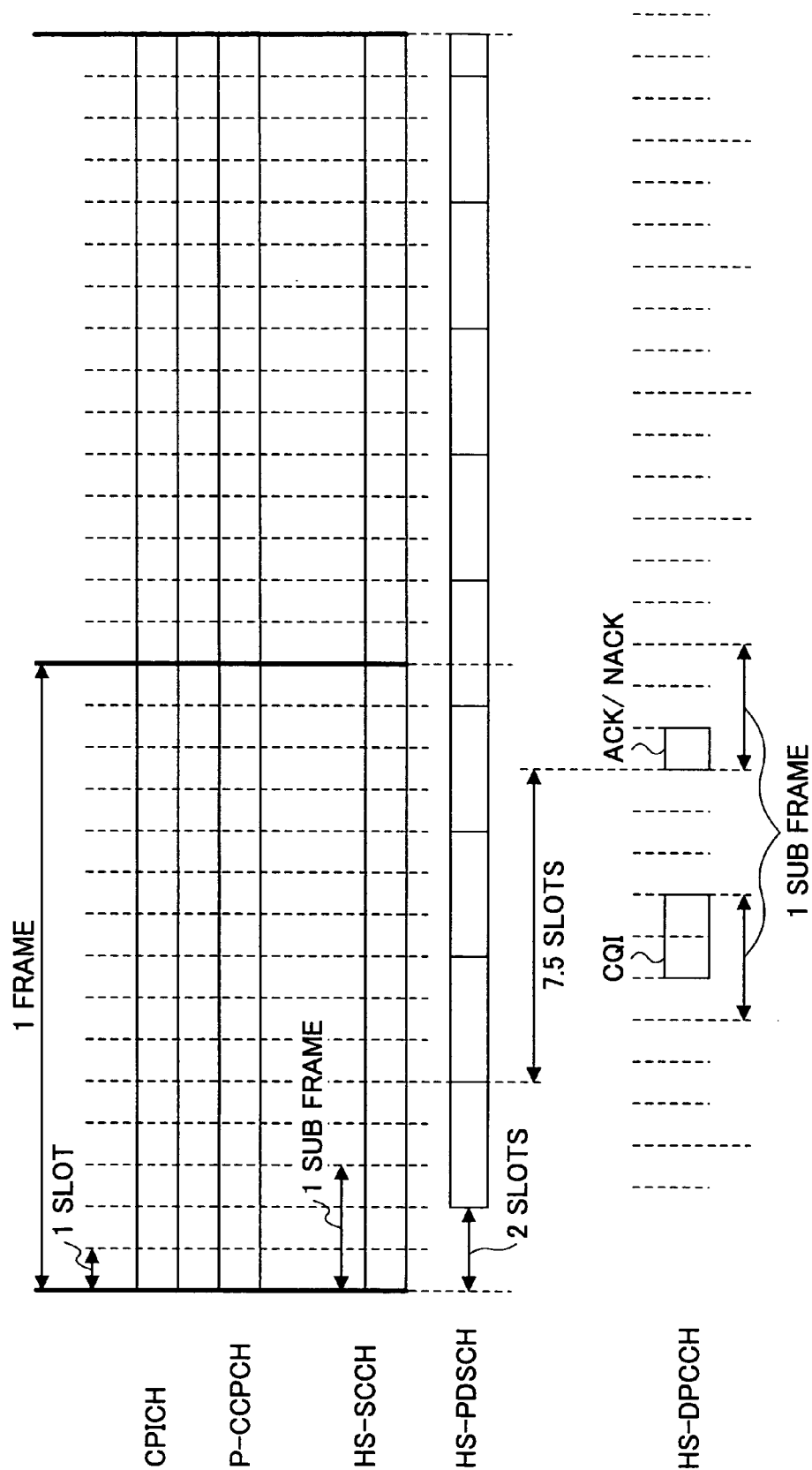
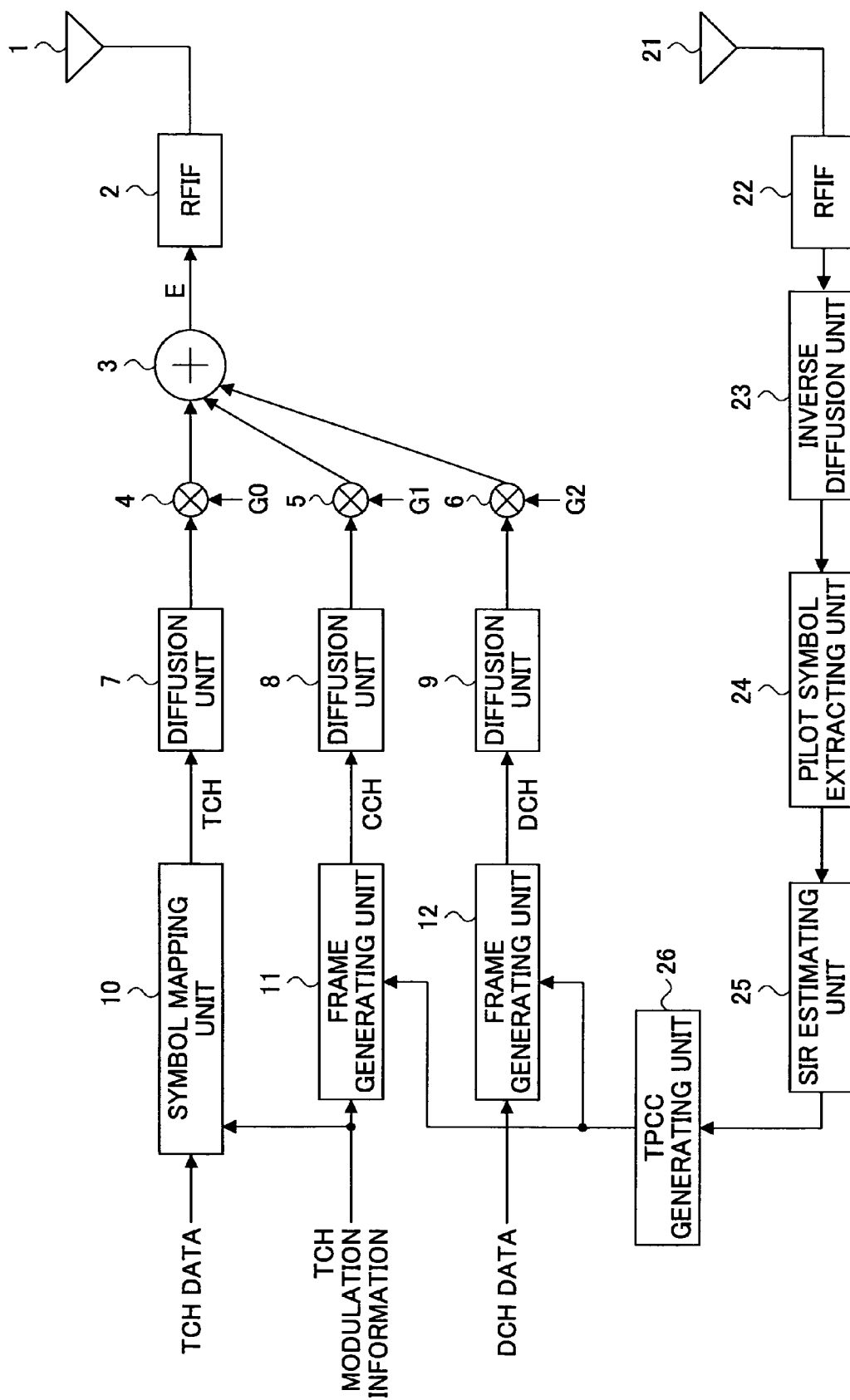


FIG. 3



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.