



US007746916B2

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

(10) **Patent No.:** **US 7,746,916 B2**  
(45) **Date of Patent:** **Jun. 29, 2010**

(54) **METHOD AND APPARATUS FOR GENERATING AND TRANSMITTING CODE SEQUENCE IN A WIRELESS COMMUNICATION SYSTEM**

(75) Inventors: **Seung Hee Han**, Seoul (KR); **Min Seok Noh**, Seoul (KR); **Yeon Hyeon Kwon**, Suwon-si (KR); **Hyun Hwa Park**, Anyang-si (KR); **Hyun Woo Lee**, Anyang-si (KR); **Dong Cheol Kim**, Uiwang-si (KR)

(73) Assignee: **LG Electronics Inc.**, Seoul (KR)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 580 days.

(21) Appl. No.: **11/563,909**

(22) Filed: **Nov. 28, 2006**

(65) **Prior Publication Data**  
US 2007/0177682 A1 Aug. 2, 2007

(30) **Foreign Application Priority Data**  
Nov. 28, 2005 (KR) ..... 10-2005-0114306  
Jul. 4, 2006 (KR) ..... 10-2006-0062467  
Jul. 7, 2006 (KR) ..... 10-2006-0064091

(51) **Int. Cl.**  
**H04B 1/00** (2006.01)  
(52) **U.S. Cl.** ..... **375/142**; 370/203; 370/208;  
375/131; 375/140; 375/146; 375/148

(58) **Field of Classification Search** ..... 370/203;  
375/131, 142  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,426,175 B2 *	9/2008	Zhuang et al.	370/203
2003/0156624 A1 *	8/2003	Koslar	375/131
2005/0036481 A1	2/2005	Chayat et al.	
2006/0050799 A1	3/2006	Hou et al.	

FOREIGN PATENT DOCUMENTS

EP	1065855	1/2001
KR	10-2007-0103917	10/2007
WO	9605668	2/1996
WO	2003049295	6/2003
WO	WO 03/075500	9/2003
WO	WO 2005/104412	11/2005

OTHER PUBLICATIONS

Texas Instruments "On allocation of Uplink Pilot Sub-Channels in Eutra SC-FDMA", 3GPP TSG-RAN WG1, E1-050922, Aug. 29, 2005.

\* cited by examiner

*Primary Examiner*—David C Payne

*Assistant Examiner*—Adolf Dsouza

(74) *Attorney, Agent, or Firm*—Lee, Hong, Degerman, Kang & Waimey

(57) **ABSTRACT**

A method of generating a code sequence in a wireless communication system is disclosed. More specifically, the method includes recognizing a desired length of the code sequence, generating a code sequence having a length different from the desired length, and modifying the length of the generated code sequence to equal the desired length. Here, the step of modifying includes discarding at least one element of the generated code sequence or inserting at least one null element to the generated code sequence.

**11 Claims, 18 Drawing Sheets**

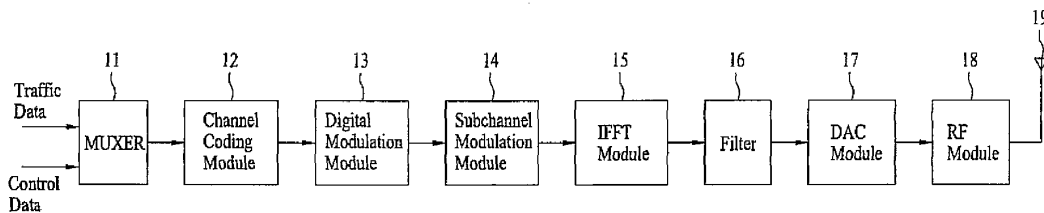


FIG. 1

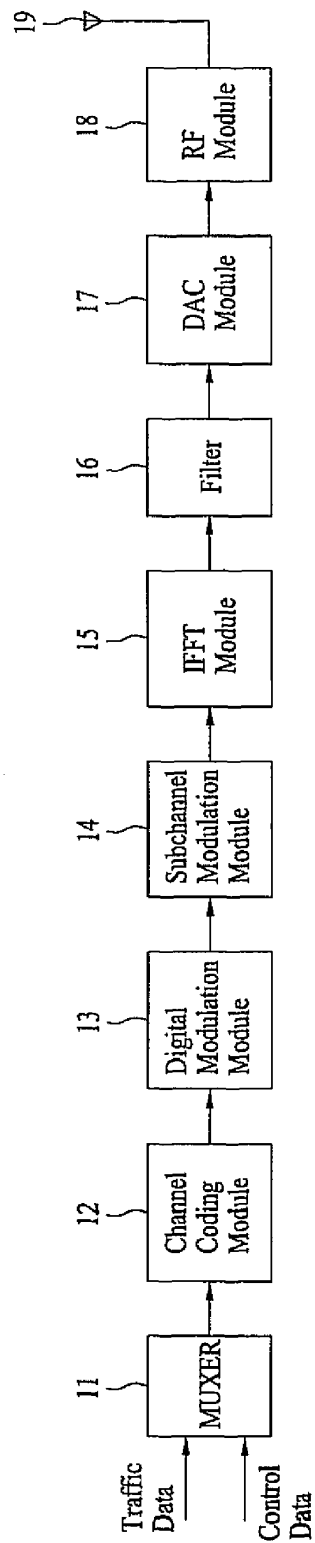


FIG. 2

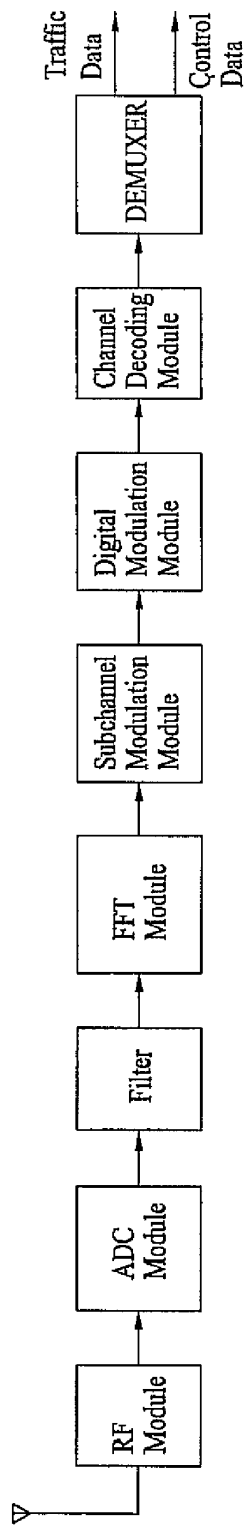


FIG. 3

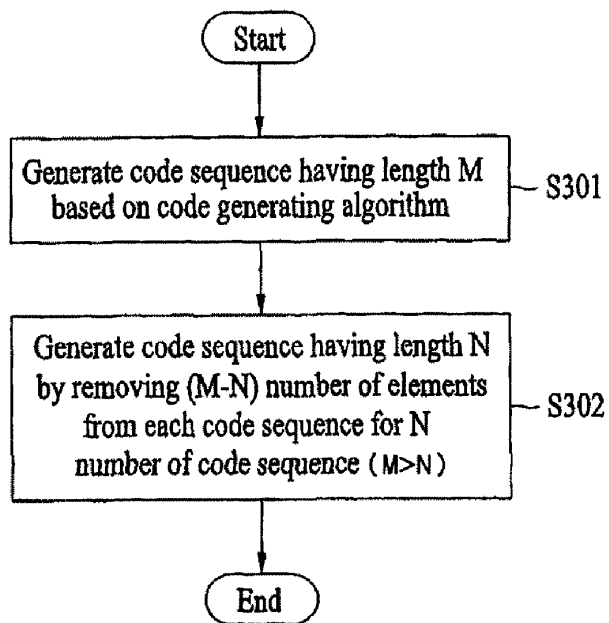
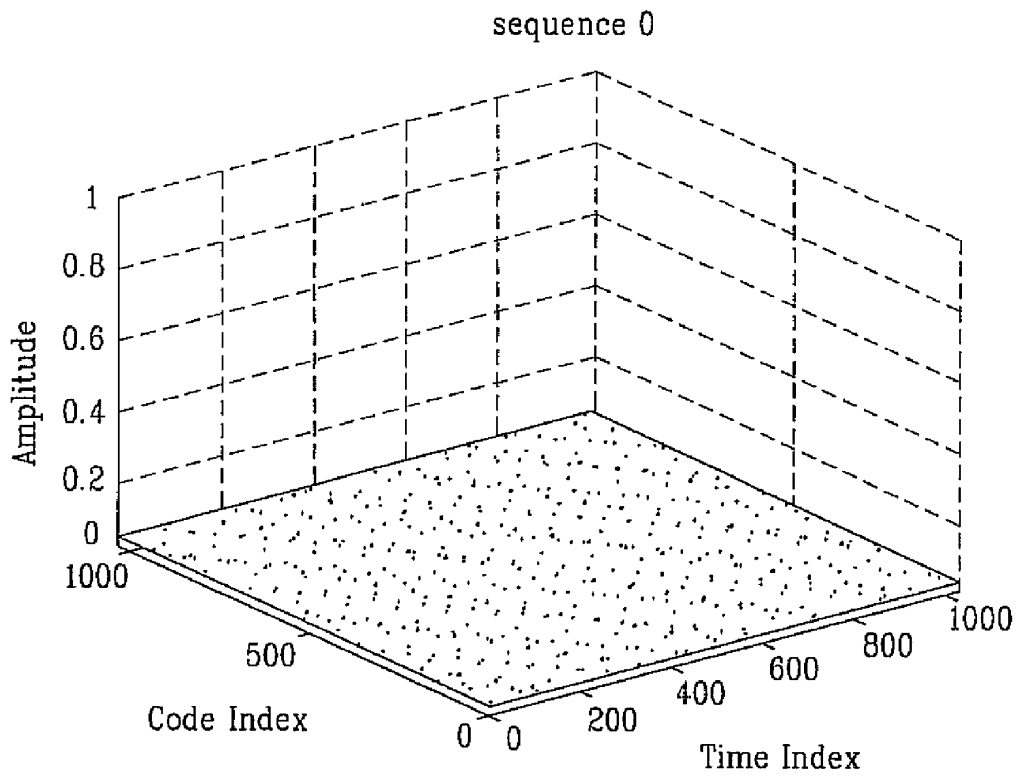


FIG. 4



# 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.