



US007953178B2

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

(10) **Patent No.:** **US 7,953,178 B2**
(45) **Date of Patent:** **May 31, 2011**

(54) **APPARATUS AND METHOD FOR
DETECTING SIGNAL IN A BROADBAND
WIRELESS ACCESS SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 1016 days.

(21) Appl. No.: **11/800,024**

(22) Filed: **May 3, 2007**

(65) **Prior Publication Data**

US 2007/0258530 A1 Nov. 8, 2007

(30) **Foreign Application Priority Data**

May 3, 2006 (KR) 10-2006-0039821

(51) **Int. Cl.**

H04K 1/02 (2006.01)

H04L 25/49 (2006.01)

(52) **U.S. Cl.** **375/296**; 375/299; 375/259

(58) **Field of Classification Search** 375/260,
375/261, 150, 145, 295; 455/101, 103, 136,
455/273, 295

See application file for complete search history.

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(57) **ABSTRACT**

An apparatus and method for signal detection in a Broadband Wireless Access (BWA) system are provided, in which in a transmitter, a first preamble sequence generator generates preamble sequences, a low-Peak-to-Average Power Ratio (PAPR) preamble sequence selector selects a first low-PAPR preamble sequence from among the generated preamble sequences, a preamble sequence copier copies the first low-PAPR preamble sequence at least once and outputs the first low-PAPR preamble sequence and the at least one copy, a complex conjugator generates preamble sequences orthogonal to the first low-PAPR preamble sequence and the at least one copy by calculating complex conjugates of the first low-PAPR preamble sequence and the at least one copy, and a second preamble sequence generator generates at least one second low-PAPR preamble sequence using the first low-PAPR preamble sequence.

11 Claims, 13 Drawing Sheets

