



US009094268B2

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

(10) **Patent No.:** **US 9,094,268 B2**
(45) **Date of Patent:** **Jul. 28, 2015**

(54) **MULTICARRIER TRANSMISSION SYSTEM WITH LOW POWER SLEEP MODE AND RAPID-ON CAPABILITY**

52/0235 (2013.01); *H04W 52/0241* (2013.01);
H04L 12/40169 (2013.01); *Y02B 60/50*
(2013.01)

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(58) **Field of Classification Search**
CPC H04B 1/402; H04B 3/23; H04L 27/2601
USPC 375/219, 220, 222, 260, 282, 356, 373,
375/376; 370/311, 378, 505; 455/500, 551,
455/560, 574
See application file for complete search history.

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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 0 days.

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(21) Appl. No.: **14/295,981**

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(22) Filed: **Jun. 4, 2014**

EP 0473465 3/1992
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(65) **Prior Publication Data**

(Continued)

US 2014/0286379 A1 Sep. 25, 2014

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Official Action for Canadian Patent Application No. 2,800,005, dated Jun. 11, 2014.

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Related U.S. Application Data

Primary Examiner — Khai Tran

(63) Continuation of application No. 14/092,248, filed on Nov. 27, 2013, now Pat. No. 8,750,352, which is a continuation of application No. 13/887,889, filed on May 6, 2013, now Pat. No. 8,611,404, which is a

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(Continued)

(57) **ABSTRACT**

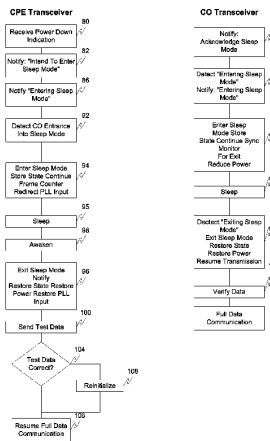
(51) **Int. Cl.**
H04L 5/16 (2006.01)
H04L 27/26 (2006.01)

A multicarrier transceiver is provided with a sleep mode in which it idles with reduced power consumption when it is not needed to transmit or receive data. The full transmission and reception capabilities of the transceiver are quickly restored when needed, without requiring the full (and time-consuming) initialization commonly needed to restore such transceivers to operation after inactivity.

(Continued)

(52) **U.S. Cl.**
CPC *H04L 27/2601* (2013.01); *H04L 12/40006* (2013.01); *H04M 11/06* (2013.01); *H04W*

28 Claims, 4 Drawing Sheets



Related U.S. Application Data

- continuation of application No. 13/152,558, filed on Jun. 3, 2011, now Pat. No. 8,437,382, which is a continuation of application No. 12/615,946, filed on Nov. 10, 2009, now Pat. No. 7,978,753, which is a continuation of application No. 11/425,507, filed on Jun. 21, 2006, now Pat. No. 7,697,598, which is a continuation of application No. 11/289,516, filed on Nov. 30, 2005, now abandoned, which is a continuation of application No. 11/090,183, filed on Mar. 28, 2005, now abandoned, which is a continuation of application No. 10/778,083, filed on Feb. 17, 2004, now abandoned, which is a continuation of application No. 10/175,815, filed on Jun. 21, 2002, now abandoned, which is a continuation of application No. 09/581,400, filed as application No. PCT/US99/01539 on Jan. 26, 1999, now Pat. No. 6,445,730.
- (60) Provisional application No. 60/072,447, filed on Jan. 26, 1998.
- (51) **Int. Cl.**
H04L 12/40 (2006.01)
H04M 11/06 (2006.01)
H04W 52/02 (2009.01)

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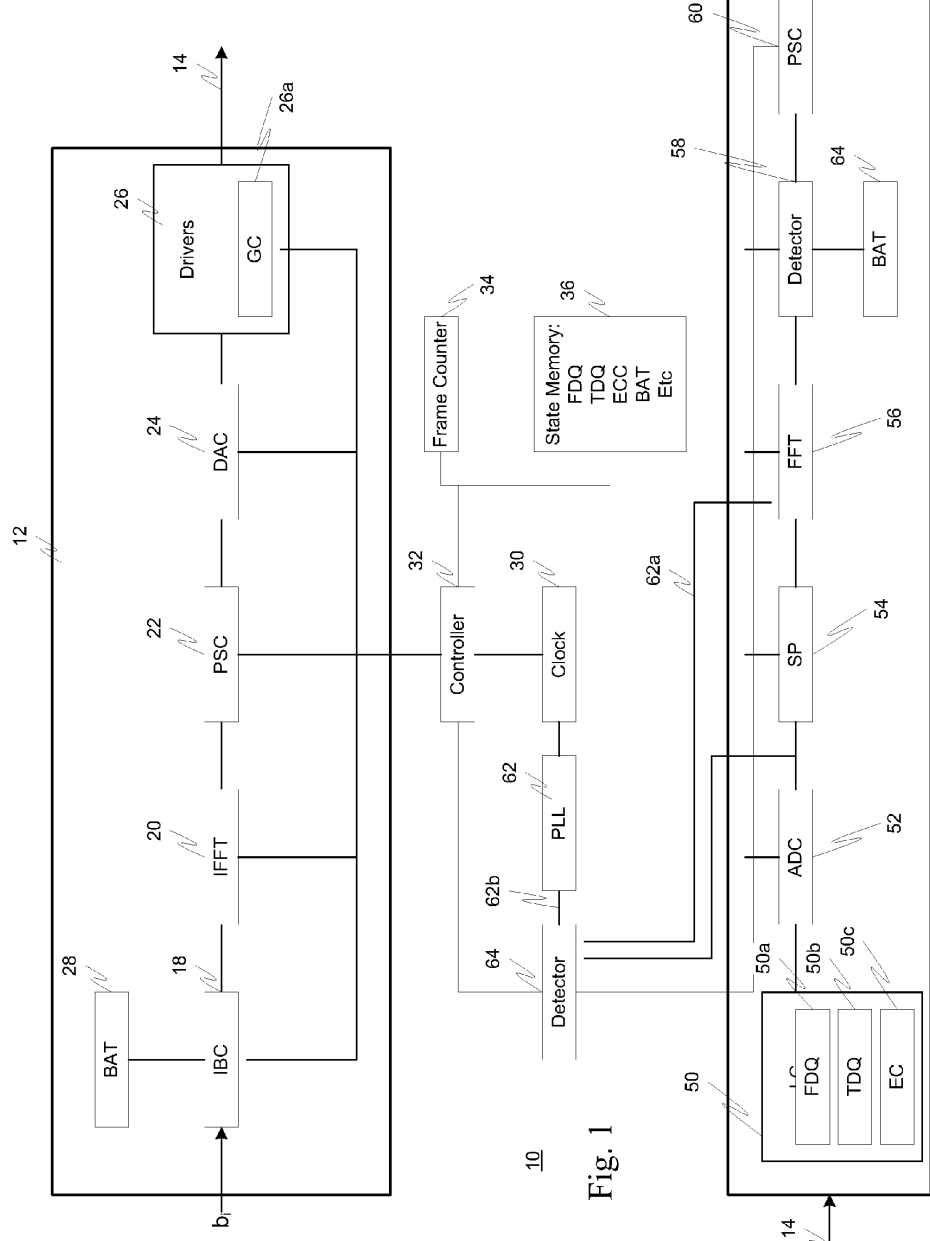


Fig. 1

Subchannel	Bits
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50	6
51	6
52	7
.	.
.	.

Fig. 1A



Fig. 1B

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