

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

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

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Related U.S. Application Data

(63) 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.

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(51) **Int. Cl.**
H04L 5/16 (2006.01)
H04L 27/28 (2006.01)

(52) **U.S. Cl.**
 USPC **375/219; 375/260**

(58) **Field of Classification Search**
 USPC 375/219, 220, 222, 260, 282, 356, 373, 375/376; 370/278, 311, 503; 455/500, 551, 455/560, 574

See application file for complete search history.

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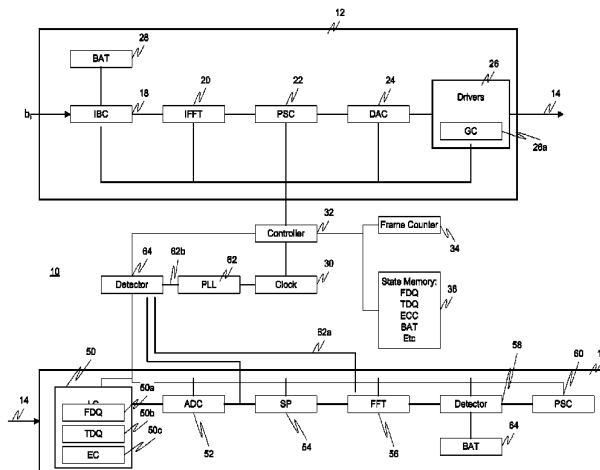
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(57) **ABSTRACT**

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.

20 Claims, 4 Drawing Sheets



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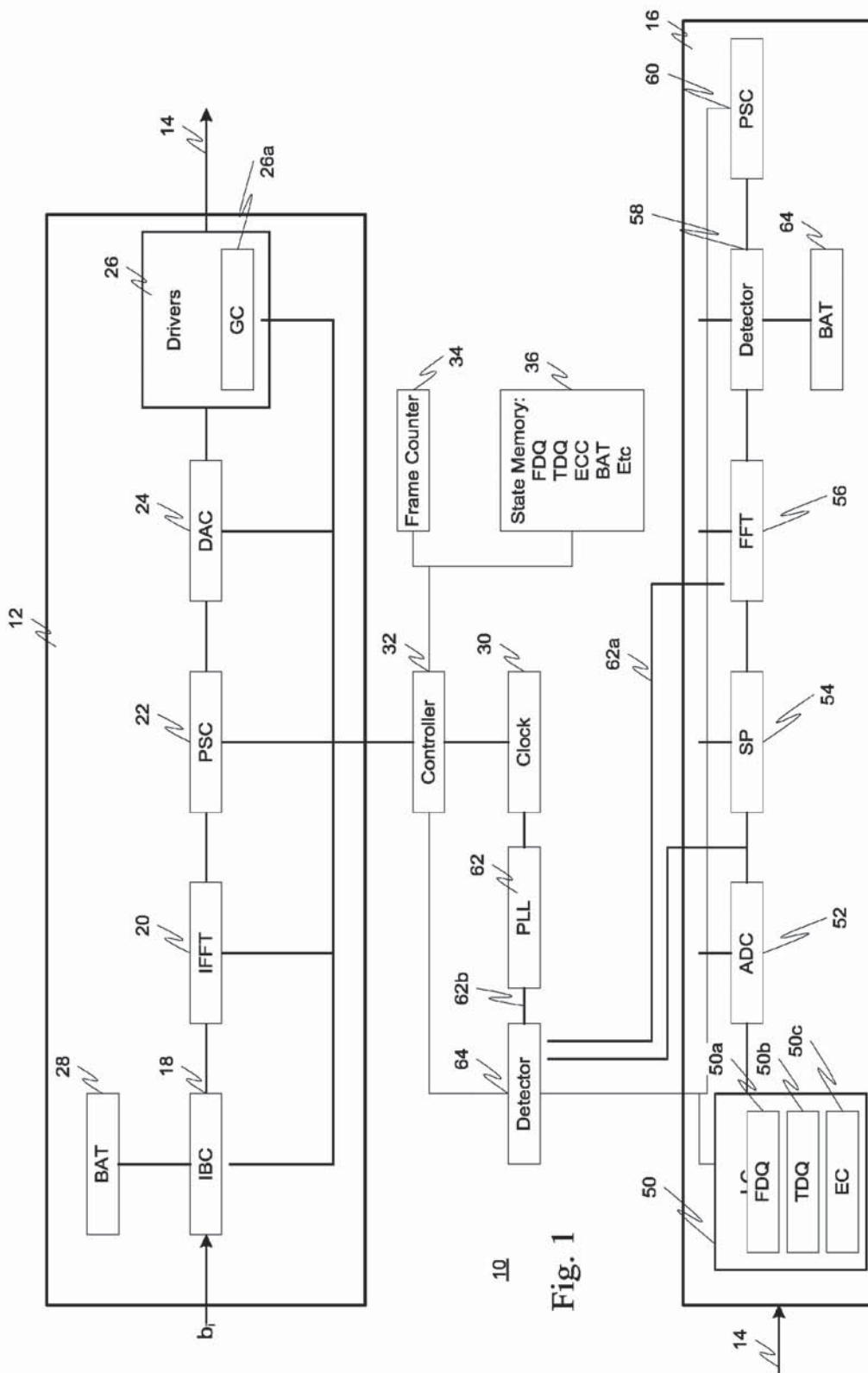


Fig. 1

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

Fig. 1A



Fig. 1B

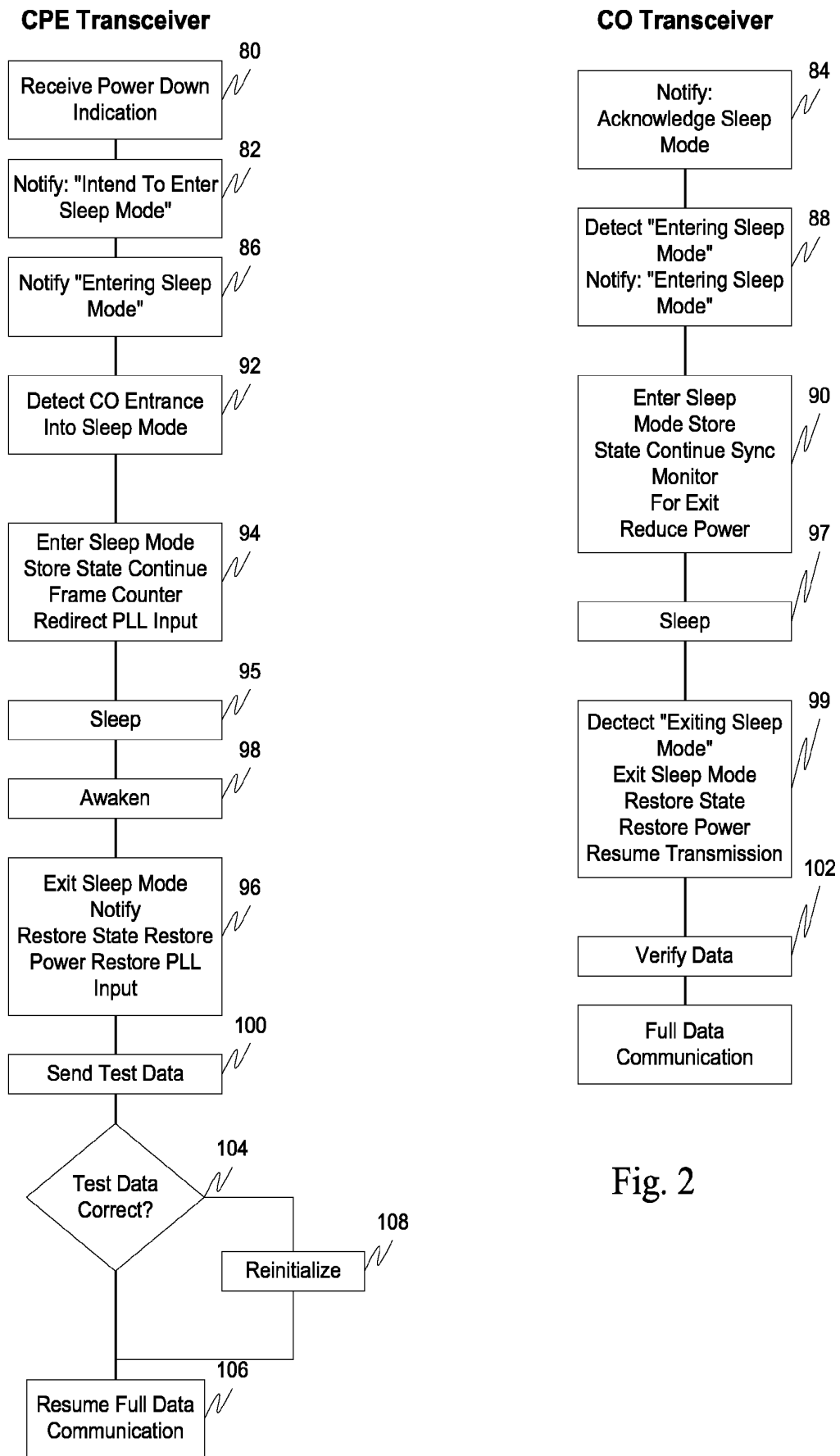


Fig. 2

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