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Rydbeck et al.

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(54) **CELLULAR PHONE WITH EXPANSION MEMORY FOR AUDIO AND VIDEO STORAGE**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154 (a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1084 days.

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H04M 1/00 (2006.01)

(52) **U.S. Cl.** **455/557**; 455/556.1; 455/569.1; 455/575.2

(58) **Field of Classification Search** 455/550, 455/557, 563, 566, 568, 569, 575, 90, 95, 455/100, 66, 344, 527, 528, 415, 404, 558, 455/556, 556.1, 575.1-575.6, 57.8, 575.9, 455/517, 556.2, 90.1, 90.2, 90.3, 550.1, 569.1, 455/404.1; 379/110.01, 127, 142

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 4,481,382 A 11/1984 Villa-Real
- 4,591,661 A * 5/1986 Benedetto et al. 455/568
- 4,875,229 A 10/1989 Palett et al.
- 4,993,061 A * 2/1991 Hsieh 455/403
- 5,099,514 A 3/1992 Acree

- 5,243,640 A * 9/1993 Hadley et al. 455/426.1
- 5,408,528 A 4/1995 Carlson et al.
- 5,473,671 A * 12/1995 Partridge, III 455/445
- 5,522,049 A * 5/1996 Kimura et al. 710/301
- 5,550,754 A 8/1996 McNelley et al.
- 5,594,779 A * 1/1997 Goodman 455/3.04
- 5,661,788 A * 8/1997 Chin 379/142.01
- 5,668,868 A 9/1997 Nordenstrom
- 5,722,069 A * 2/1998 Donner 455/418
- 5,845,219 A * 12/1998 Henriksson 455/567
- 5,890,074 A * 3/1999 Rydbeck et al. 455/558
- 5,978,689 A * 11/1999 Tuoriniemi et al. 455/569.1
- 5,987,106 A * 11/1999 Kitamura 379/110.01
- 5,992,637 A * 11/1999 Weder 206/584
- 6,006,115 A * 12/1999 Wingate 455/575.2
- 6,243,596 B1 * 6/2001 Kikinis 455/572

(Continued)

FOREIGN PATENT DOCUMENTS

DE 19528424 A 11/1996

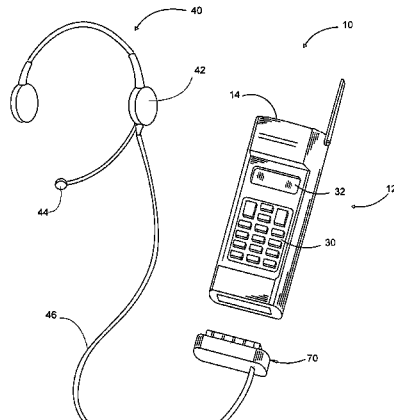
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(57) **ABSTRACT**

A cellular telephone includes an internally integrated digital entertainment module. The telephone includes a transceiver unit and a headset which is connected to the transceiver unit by wired or wireless link. The entertainment module includes an interchangeable ROM and/or expansion RAM for storing music or other audio signals for playback through the telephone's headset. Music or other audio signals in digitized form is stored in the interchangeable ROM or is loaded into the expansion RAM from a CD player, computer, or other source of digitized audio signals. Under control of the cellular telephone's microprocessor, the digitally stored audio signal is played back through the telephone's headset. The entertainment module may be located in the transceiver unit, a removable battery pack, or in a separate adapter.

19 Claims, 7 Drawing Sheets



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U.S. PATENT DOCUMENTS

6,516,466	B1 *	2/2003	Jackson	725/62	GB	2289555	A	11/1995
6,563,805	B1 *	5/2003	Ma et al.	370/325	GB	2308775	A	7/1997
6,594,366	B1 *	7/2003	Adams	381/74	JP	5-91169	A *	4/1993
6,662,022	B1 *	12/2003	Kanamori et al.	455/556.1	JP	2001-268181	*	9/2001
6,681,120	B1 *	1/2004	Kim	455/556.1	JP	2001-333152	*	11/2001
6,944,287	B1 *	9/2005	Mori	379/390.01	WO	97/26744		7/1997
6,980,827	B1 *	12/2005	Lin et al.	455/556.1				

FOREIGN PATENT DOCUMENTS

EP 0 665 655 A2 8/1995

* cited by examiner

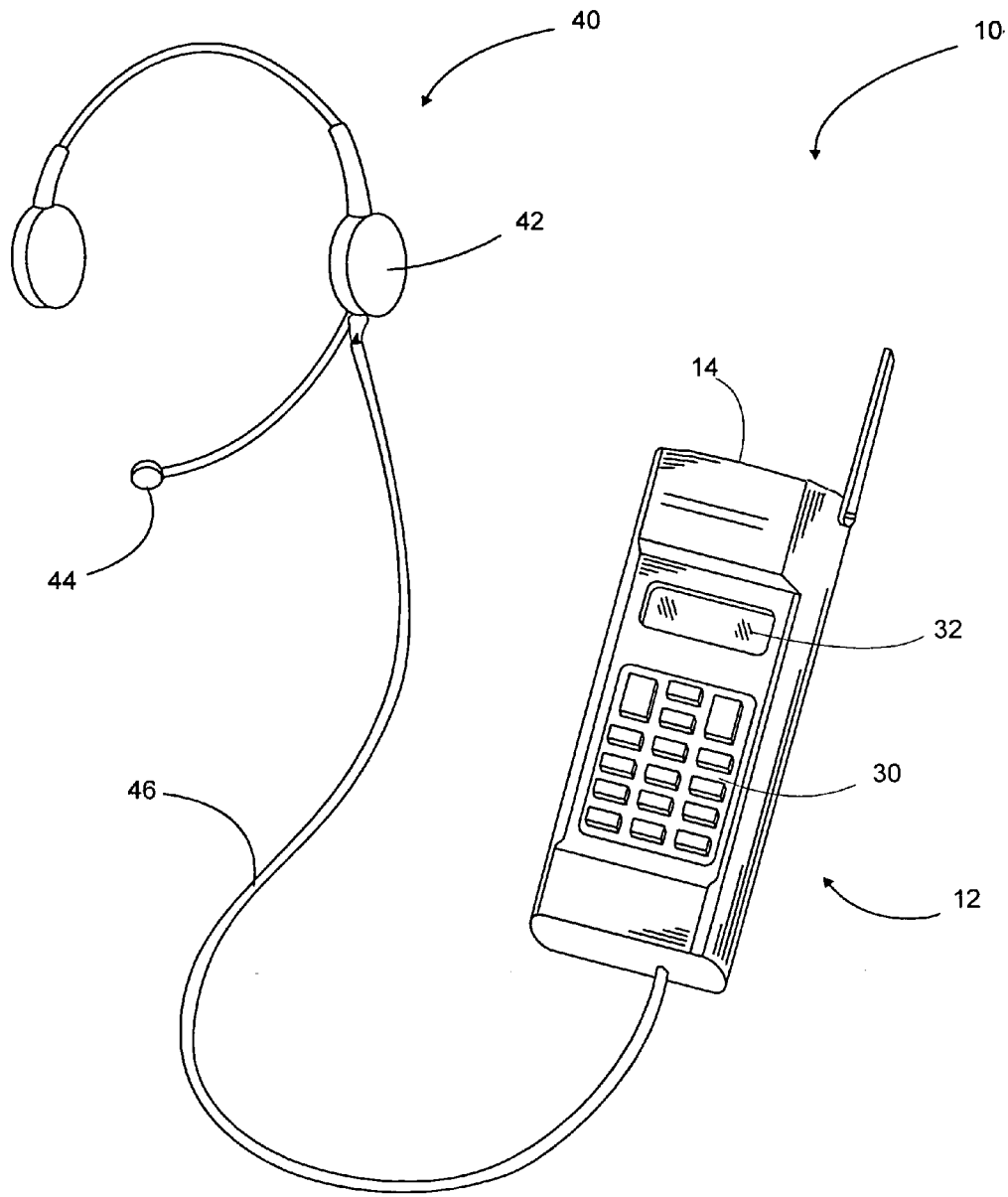


FIG. 1

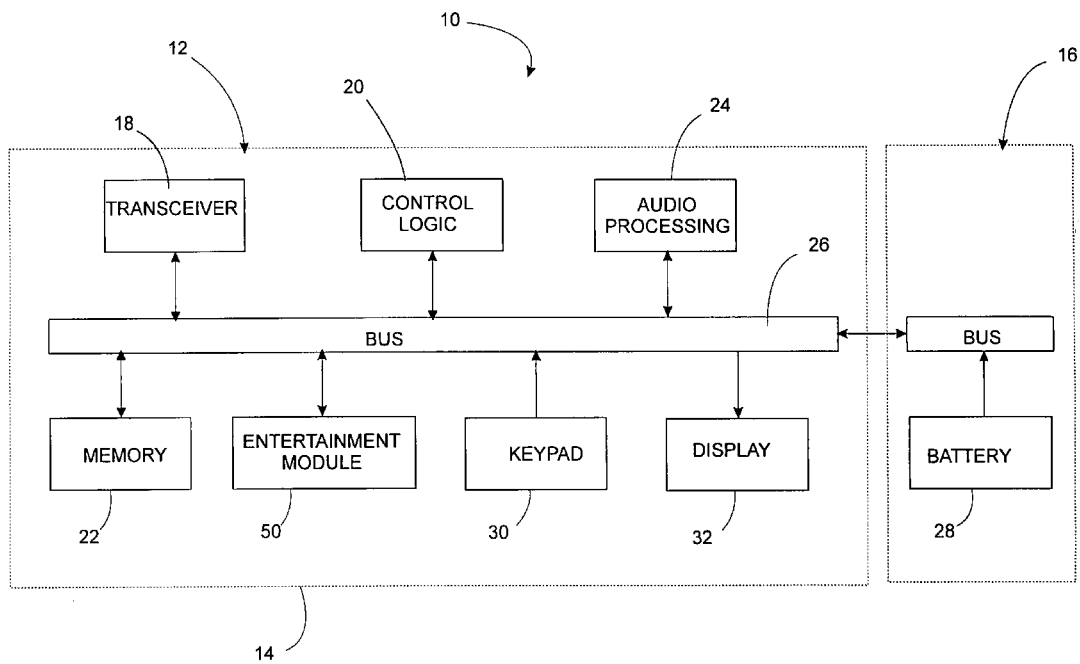


FIG. 2

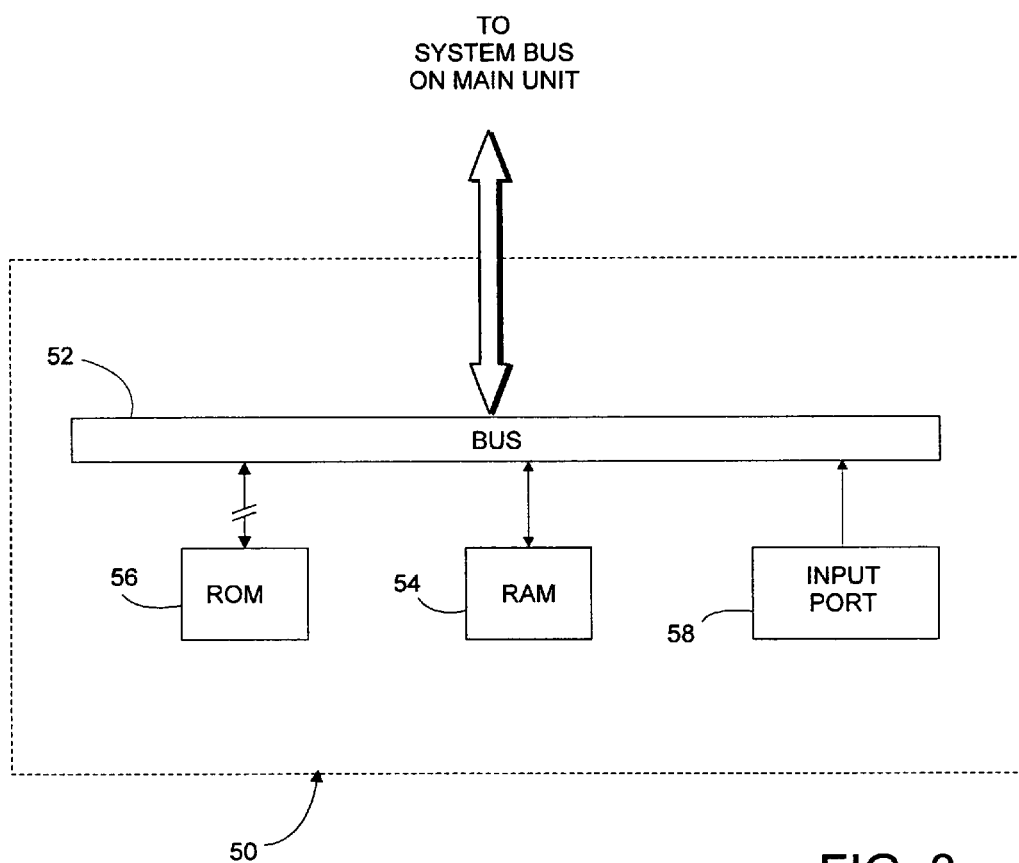


FIG. 3

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