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# United States Patent [19]

[11] Patent Number: **6,041,295**

Hinderks

[45] Date of Patent: **\*Mar. 21, 2000**

- [54] **COMPARING CODEC INPUT/OUTPUT TO ADJUST PSYCHO-ACOUSTIC PARAMETERS** 5,583,962 12/1996 Davis et al. .... 395/2.38  
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[75] Inventor: **Larry W. Hinderks**, Holmdel, N.J.

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 CDQ1000 Reference Manual, Rev. 3.3, May 1994.  
 CDQ2000 Reference Manual, Rev. 6.92-2, Jul. 1994.  
 CDQ2001 Reference Manual, Rev. 2.2-3, Aug. 1994.

[73] Assignee: **Corporate Computer Systems**, Holmdel, N.J.

[\*] 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).

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[21] Appl. No.: **08/630,790**

### [57] ABSTRACT

[22] Filed: **Apr. 10, 1996**

### Related U.S. Application Data

[63] Continuation of application No. 08/420,721, Apr. 10, 1995, and a continuation of application No. 08/419,200, Apr. 10, 1995.

An adjustable CODEC receives a signal and compresses a received audio signal based on a psycho-acoustic compression system. The psycho-acoustic compression system includes several psycho-acoustic parameters which may be adjusted by the user to optimize the compression system for a specific application, transmission medium, or end user, for example. The compression and the adjustment of compression parameters may occur simultaneously in real time without interruption of the compressed signal. Additionally, the parameters may be adjusted in smart groups of a plurality of parameters that are, for example, sympathetic or are often adjusted together. An additional signal may also be combined with the compressed signal and the resultant combined signal may be transmitted over a single transmission path. For example, the additional signal may be multiplexed into the compressed data stream for TDMA transmission. Additionally, the parameters selected at a local, user-adjusted CODEC may be transmitted to a plurality of remote CODEC for remote use.

[51] **Int. Cl.<sup>7</sup>** ..... **G10L 19/00**

[52] **U.S. Cl.** ..... **704/206**

[58] **Field of Search** ..... 395/2.09, 2.1, 395/2.12-2.15, 2.38, 2.39, 2.87; 704/200, 201, 203-206, 229, 230, 278

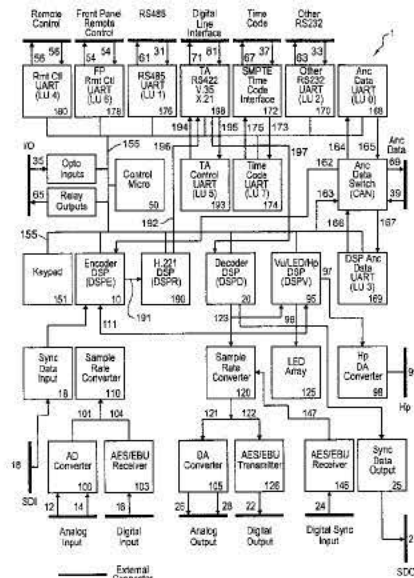
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**44 Claims, 23 Drawing Sheets**

Microfiche Appendix Included  
(15 Microfiche, 912 Pages)



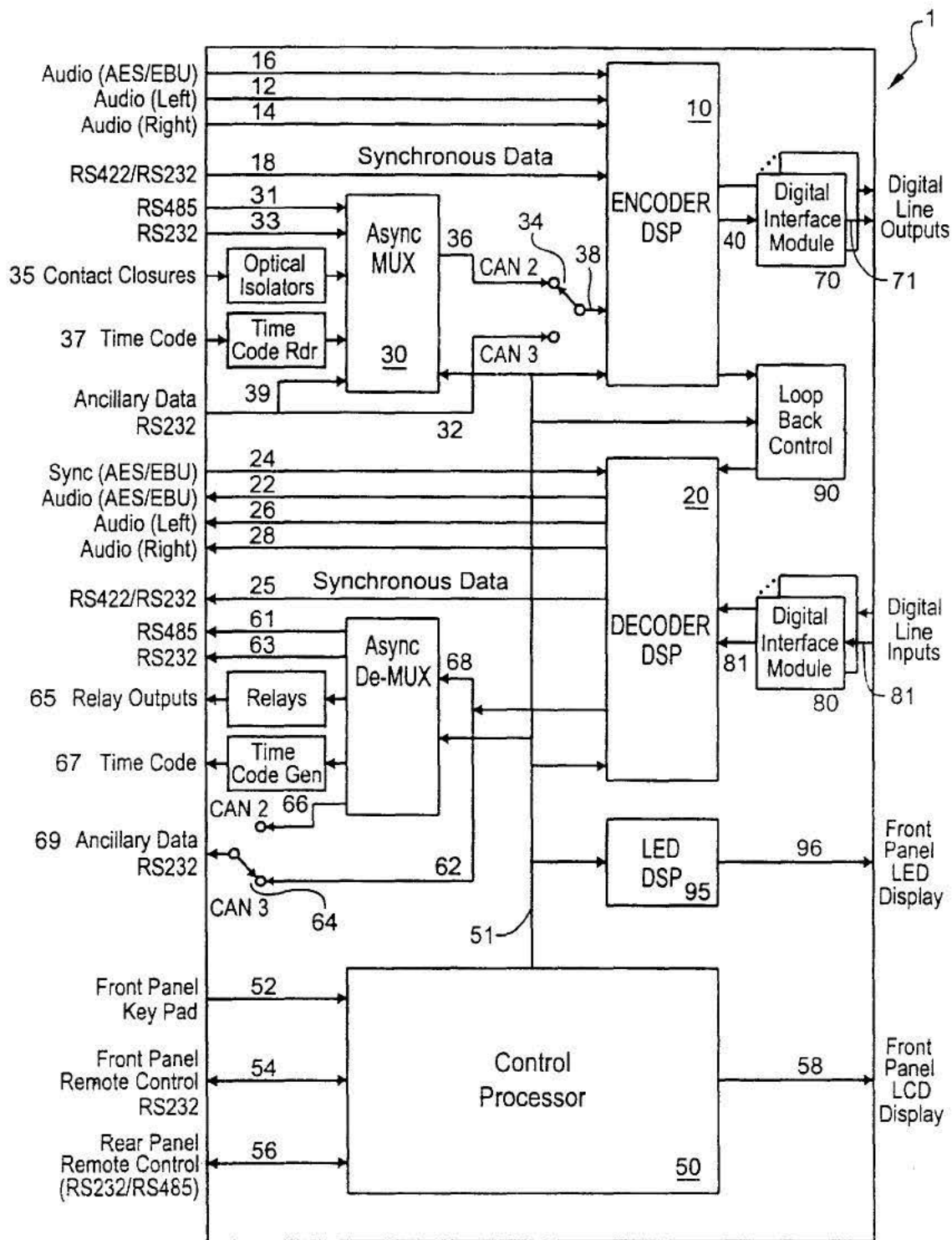


FIG. 1

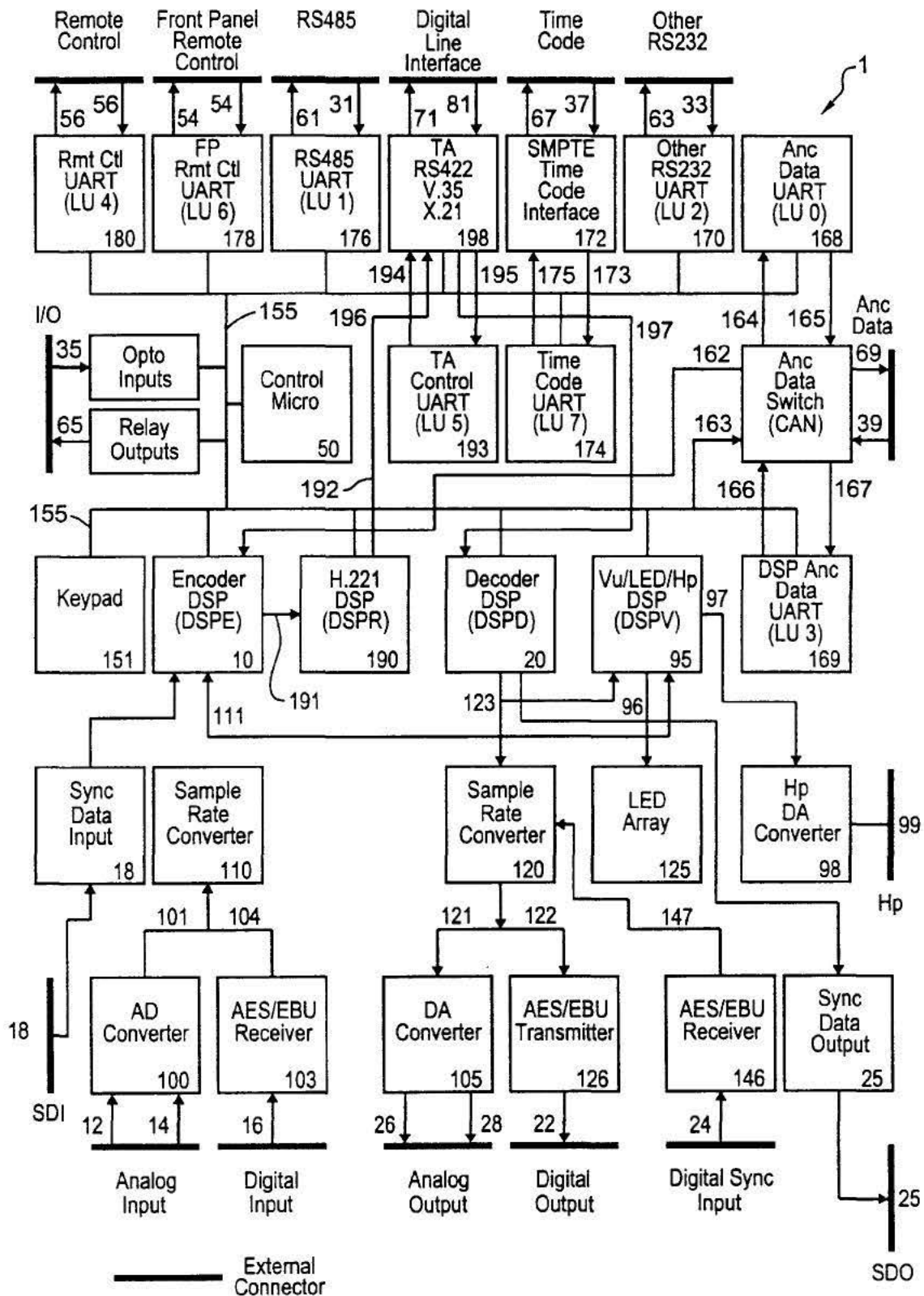


FIG. 2



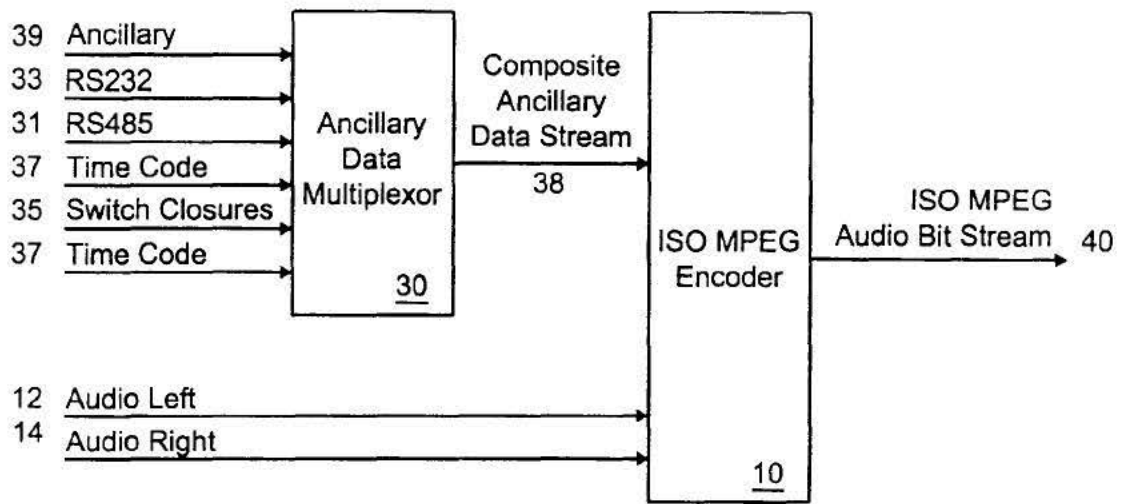


FIG. 3

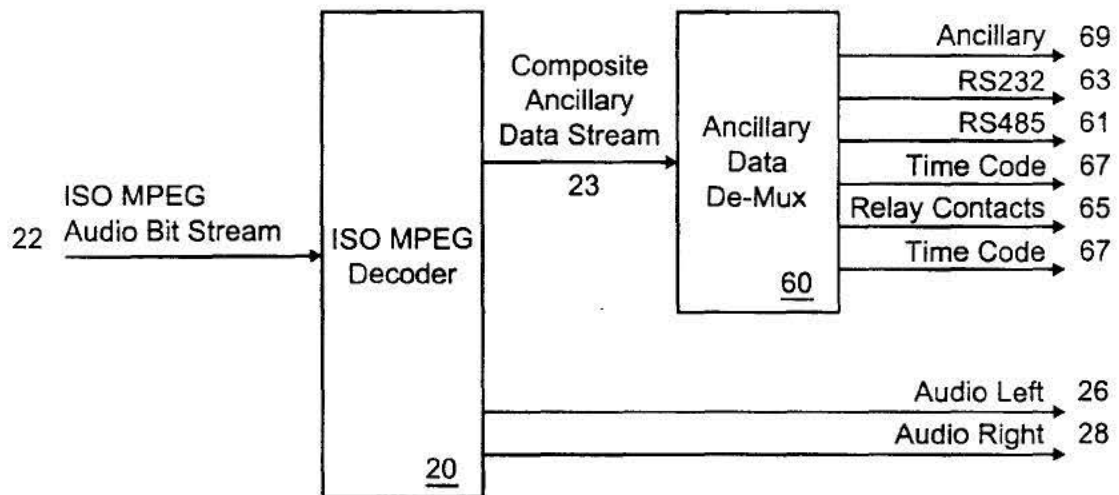


FIG. 4

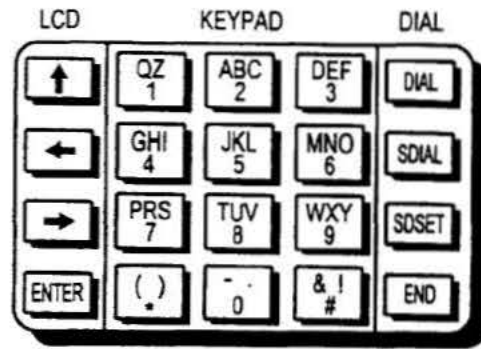


FIG. 5

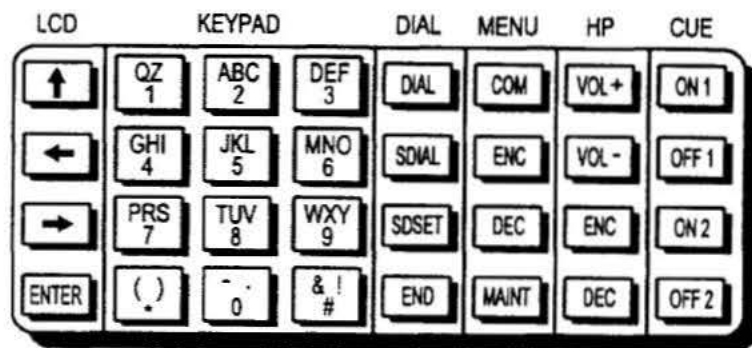


FIG. 6

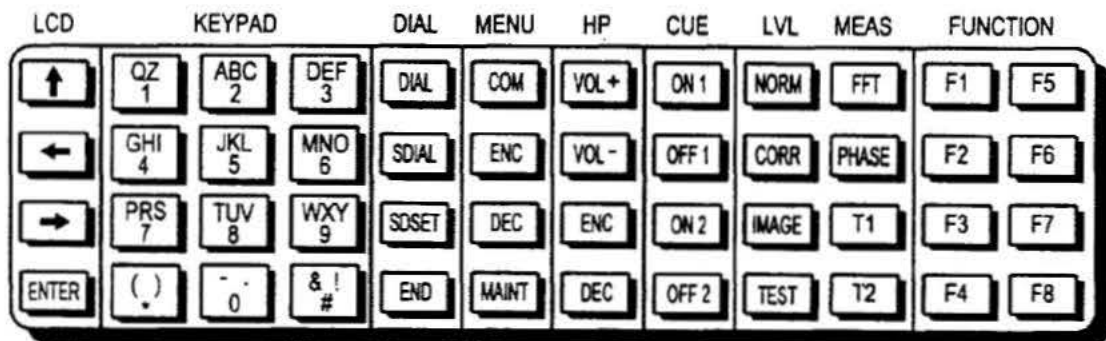


FIG. 7

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