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United States Patent [19]

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Sharma et al.

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[54] **DYNAMIC SELECTION OF COMPRESSION RATE FOR A VOICE COMPRESSION ALGORITHM IN A VOICE OVER DATA MODEM**

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[73] Assignee: **Multi-Tech Systems, Inc.**, Mounds View, Minn.

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[21] Appl. No.: **346,421**

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 271,496, Jul. 7, 1994, and a continuation-in-part of Ser. No. 2,467, Jan. 8, 1993, Pat. No. 5,452,289.

[57] ABSTRACT

[51] Int. Cl.⁶ **H04J 3/22; G10L 5/00**
[52] U.S. Cl. **370/84; 370/118; 370/112; 375/246; 395/2.28**

The present invention includes software and hardware components to enable digital data communication over standard telephone lines. The present invention converts analog voice signals to digital data, compresses that data and places the compressed speech data into packets for transfer over the telephone lines to a remote site. A voice control digital signal processor (DSP) operates to use one of a plurality of speech compression algorithms which produce a scaleable amount of compression. The rate of compression is inversely proportional to the quality of the speech the compression algorithm is able to reproduce. The higher the compression, the lower the reproduction quality. The selection of the rate of compression is dependent on such factors as the speed or data bandwidth on the communications connection between the two sites, the data demand between the sites and amount of silence detected in the speech signal. The voice compression rate is dynamically changed as the aforementioned factors change. A negotiation handshake protocol is described which enables the two sites to negotiate the compression rate based on such factors.

[58] **Field of Search** 370/94.1, 110.1, 370/118, 112, 79, 76, 82, 84, 24; 395/2, 2.2, 2.21, 2.28, 2.3, 2.31; 381/29, 32, 36, 30, 41; 375/245, 246; 455/72; 341/51

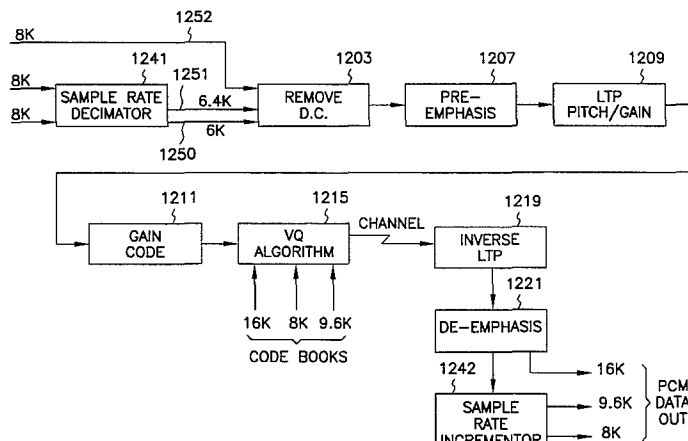
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4 Claims, 7 Drawing Sheets



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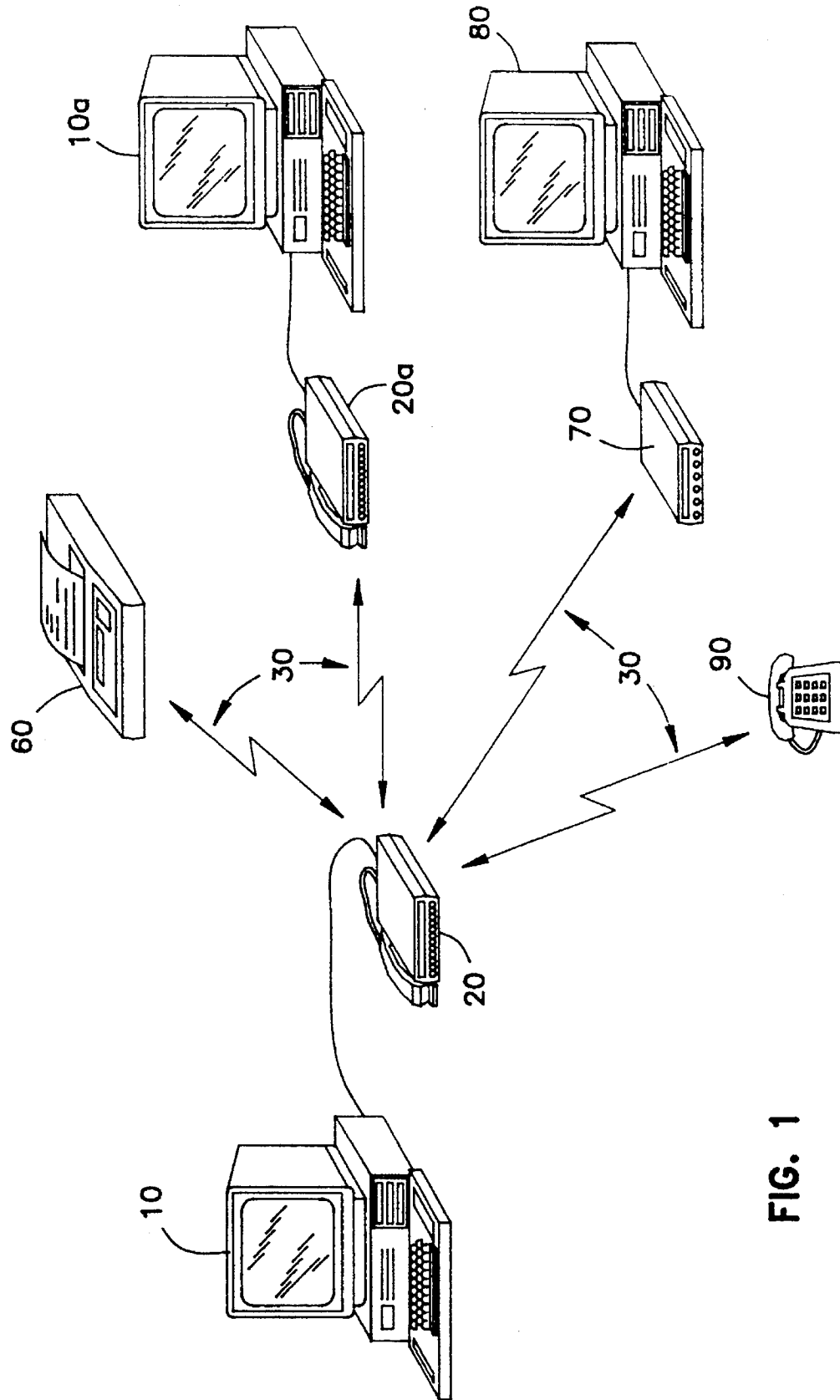


FIG. 1

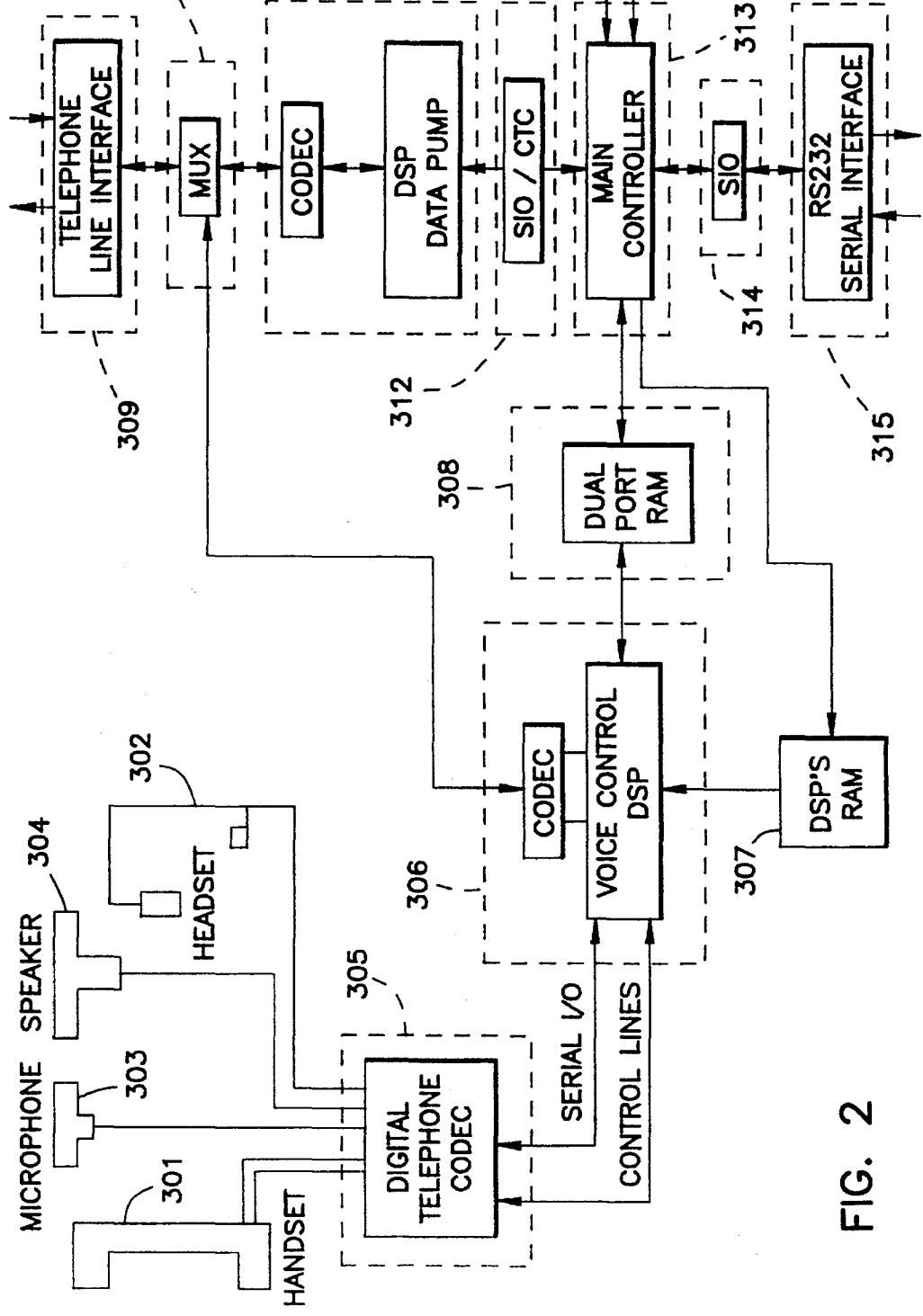


FIG. 2

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