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### **United States Patent** [19]

#### Kosowsky et al.

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## [54] TELECOMMUNICATION DEVICE AND METHOD FOR INTERACTIVE VOICE AND DATA

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[21] Appl. No.: 28,959

[22] Filed: Mar. 10, 1993

371/8.2; 374/222

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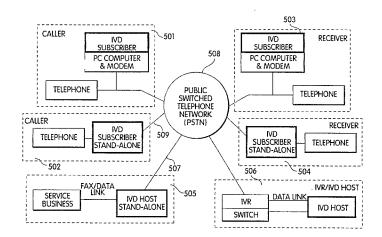
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#### [57] ABSTRACT

A telecommunication device permits mixed voice communication and data communication during a single telephone call. The device switches freely between bidirectional voice communication and bidirectional data communication, as required by the data to be communicated. The dynamic switching between voice communication and data communication is arranged so that voice communication is minimally interrupted. Data communication using the device includes creation, transmission, reception, storage, retrieval, display and use of data messages such as address and telephone number records. The device is inexpensive to produce and uses existing standards for signalling by telecommunications equipment. A complete interactive voice and data (IVD) system automatically performs data communication between IVD subscriber systems, or between an IVD subscriber system and an IVD host system. Further, in conjunction with a standard IVR, a complete IVR/IVD system automatically performs data communication with IVD subscriber systems and IVR voice communications with non-IVD subscriber systems.

#### 39 Claims, 6 Drawing Sheets





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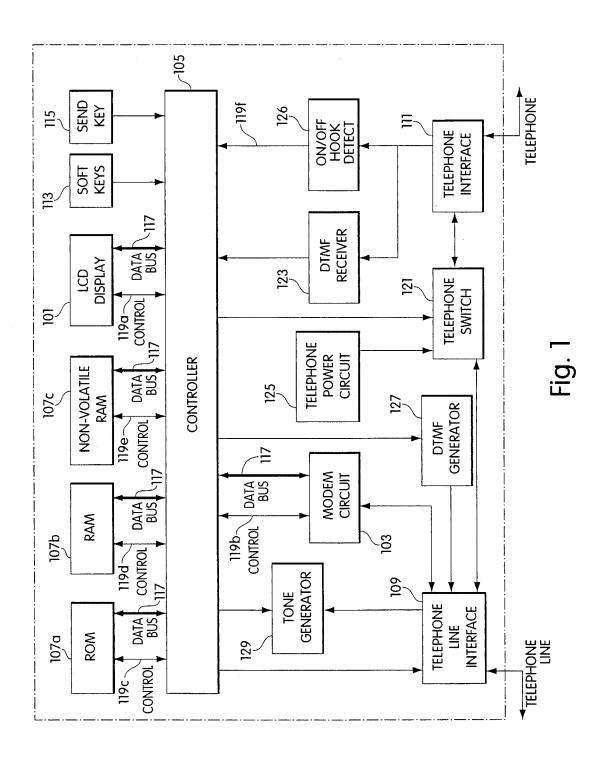
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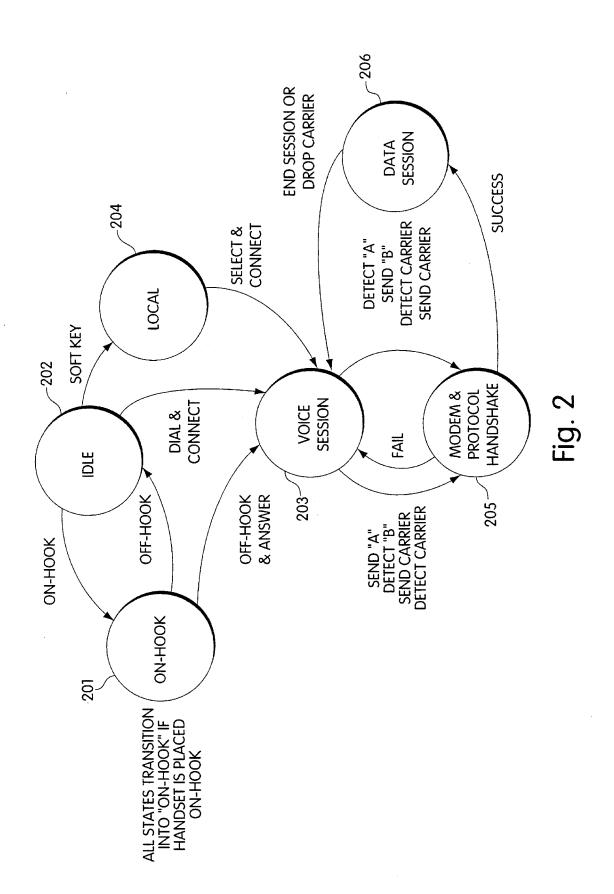
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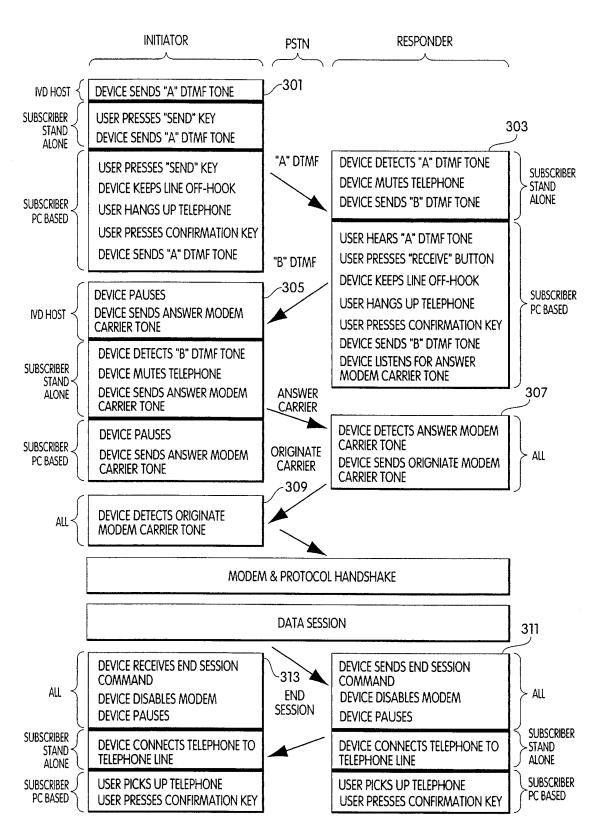


Fig. 3



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