

**United States Patent** [19]

Salazar et al.

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[54] **WIRELESS AND WIRED COMMUNICATIONS, COMMAND, CONTROL AND SENSING SYSTEM FOR SOUND AND/OR DATA TRANSMISSION AND RECEPTION**

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[51] **Int. Cl.**<sup>6</sup> ..... **H04M 11/00**

[52] **U.S. Cl.** ..... **455/420; 455/419; 340/825.72**

[58] **Field of Search** ..... 379/56, 102, 96,  
379/58, 67; 455/89, 231, 420, 556, 566,  
402

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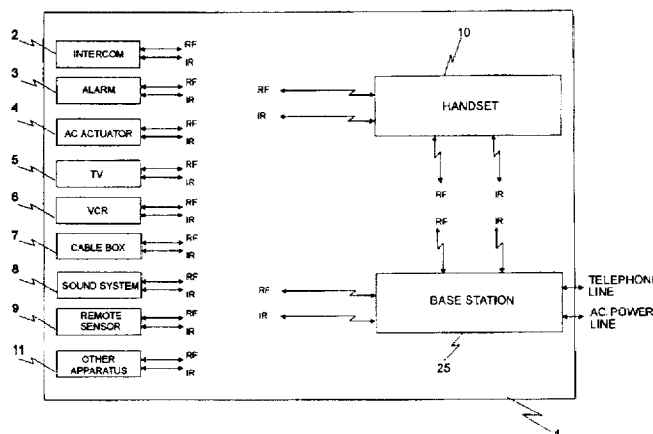
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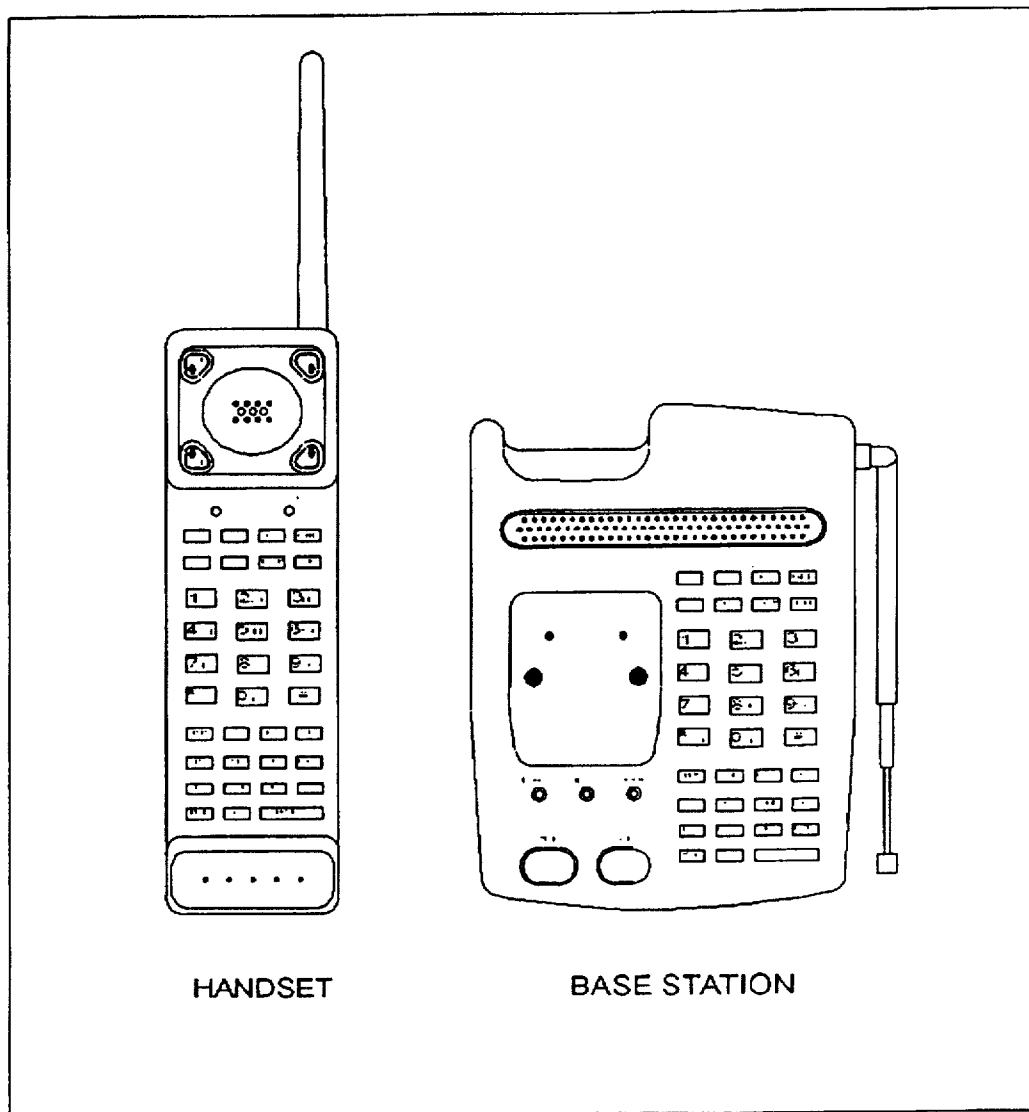
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*Attorney, Agent, or Firm*—Sofer & Haroun, LLP

[57] **ABSTRACT**

An interactive microprocessor based wireless communication device includes sound and data transceivers, signal detection and coupling devices, signal conversion device, voice recording, playback and storage device, voice activated device, display device, touch screen or similar device, sensors, frequency generation device, sound detection and reproduction devices and power source to concurrently perform generalized two way wireless communications, command, control and sensing functions utilizing radio and infra-red frequency communication links. A microprocessor receives signals from the touch screen and generates a digital data, command/or control signal for transmission to external devices such as home appliances and remote sensors. The microprocessor also responds to voice signal commands received via microphone and a voice processor. The microprocessor uses this signal to generate data, command/or control signals for transmission to external devices such as telephone, paging and intercom systems. Sound signals may be stored in a voice recorder and playback IC for subsequent message processing and coupling to a transceiver and/or a speaker. Telephone ringer signals are generated by the microprocessor and are coupled to a ringer for audio output. In response to certain commands, the wireless communication device establishes a communication link with external devices using radio frequency or infra-red frequency transmission and/or reception. Sensor signals are created by sensors that can detect physical differential changes and that can convert the changes into measurements. These signals are coupled to the microprocessor for further processing, display and/or transmission.

**34 Claims, 10 Drawing Sheets**





HANDSET

BASE STATION

1

FIG. 1a

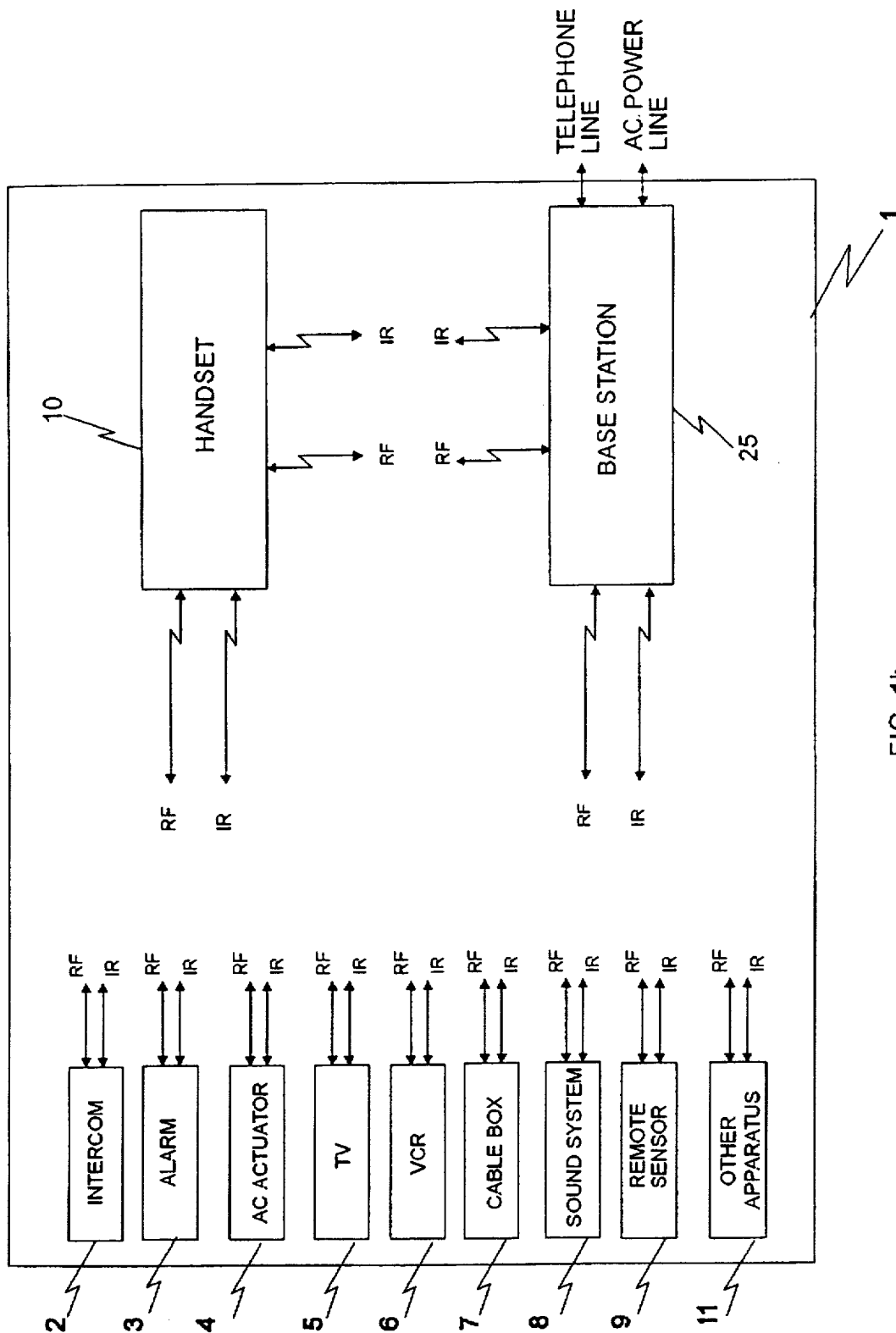


FIG. 1b

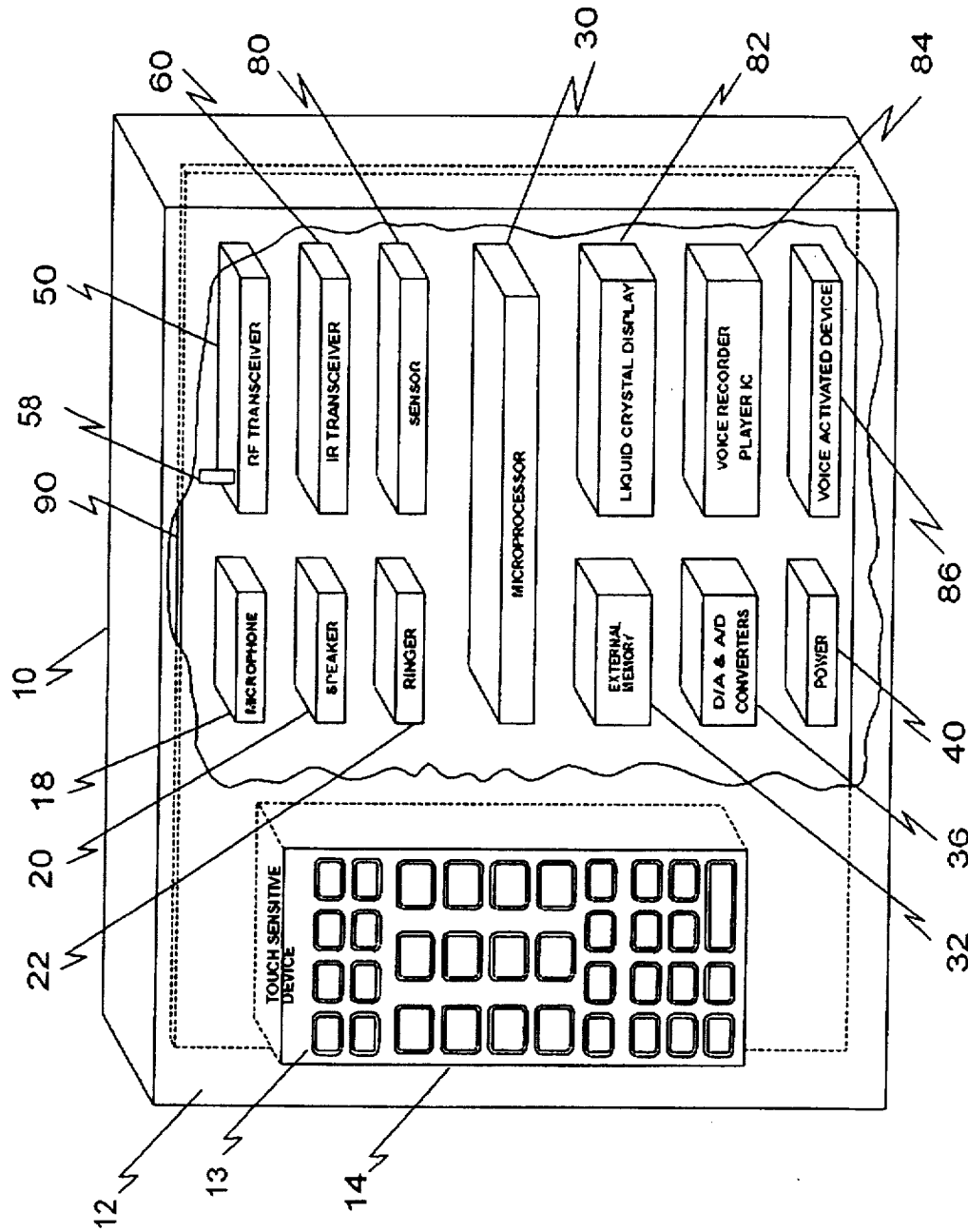


FIG. 2

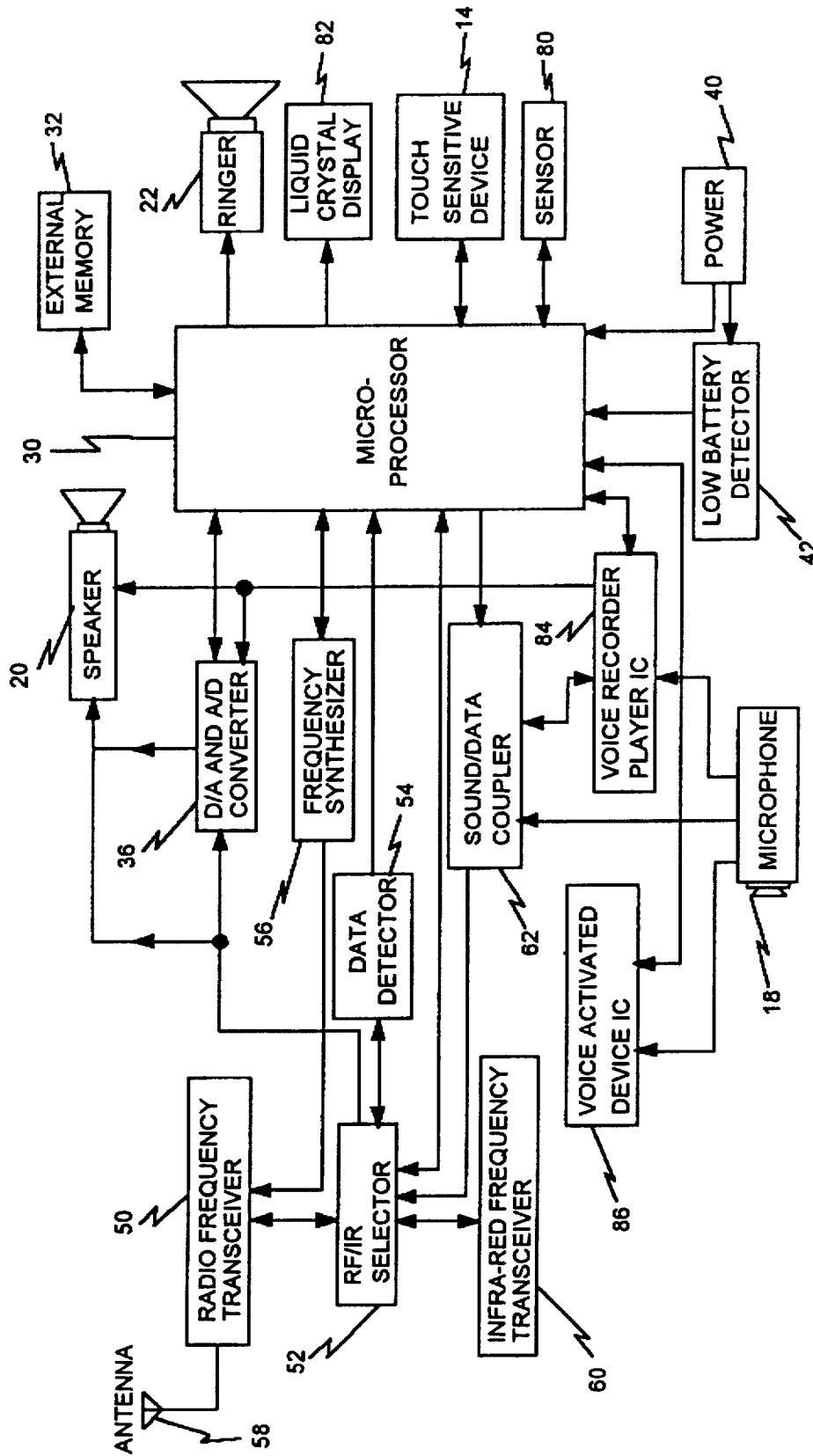


FIG. 3

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