

# United States Patent [19]

[11] Patent Number: **5,786,921**

Wang et al.

[45] Date of Patent: **Jul. 28, 1998**

[54] **INFRARED COMMUNICATION DEVICE FOR MULTISTANDARD OPERATIONS**

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[75] Inventors: **Li-Chen Wang**, Watsonville; **Keming Yeh**, Fremont, both of Calif.

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[73] Assignee: **ActiSys Corporation**, Fremont, Calif.

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[21] Appl. No.: **695,481**

### OTHER PUBLICATIONS

[22] Filed: **Aug. 12, 1996**

"In-House Wireless Communication System Using Infrared Radiation", Yukio Nakata, etc., International Conference on Computer Communication, 1984, pp. 333-339.

### Related U.S. Application Data

[62] Division of Ser. No. 290,330, Aug. 15, 1994, Pat. No. 5,617,236.

*Primary Examiner*—Leslie Pascal  
*Attorney, Agent, or Firm*—Skjerven, Morrill, MacPherson, Franklin & Friel LLP; Edward C. Kwok

[51] **Int. Cl.**<sup>6</sup> ..... **H04B 10/24**

[52] **U.S. Cl.** ..... **359/152; 359/113**

[58] **Field of Search** ..... 359/152, 153, 359/113, 172, 111, 155, 158

### [57] ABSTRACT

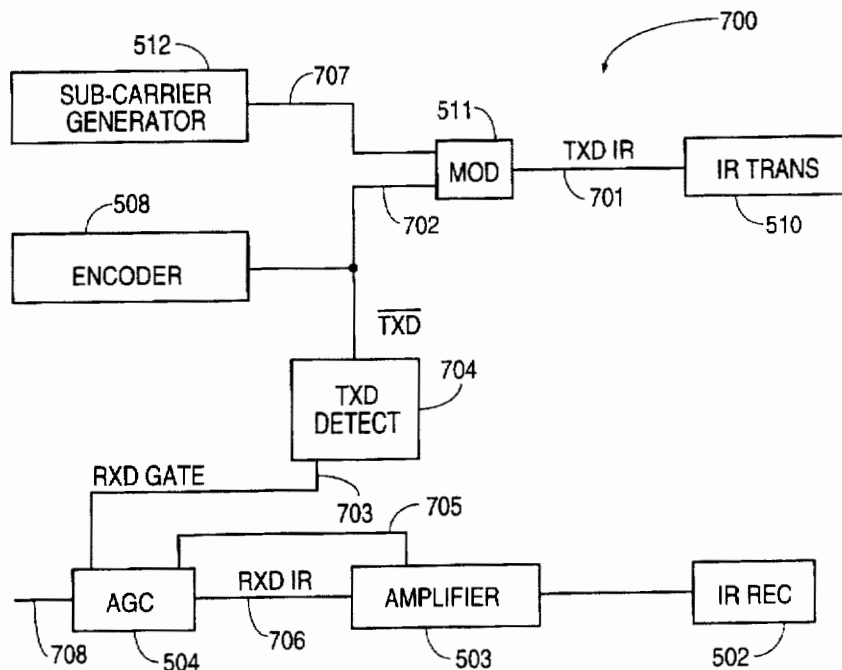
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An IR interface device is connected over a wired port to a host computer, so as to provide an IR communication link between the host computer and another computing device capable of IR communication. Such an IR interface device may also include a coupling to a printer device. An IR conference device allows communication between devices using different IR communication protocols by providing individual IR communication links to each of the communicating devices and passing data between the individual IR communication links. An IR transceiver integrated circuit with automatic gain control is provided.

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**3 Claims, 39 Drawing Sheets**



'RXD GATE' block diagram

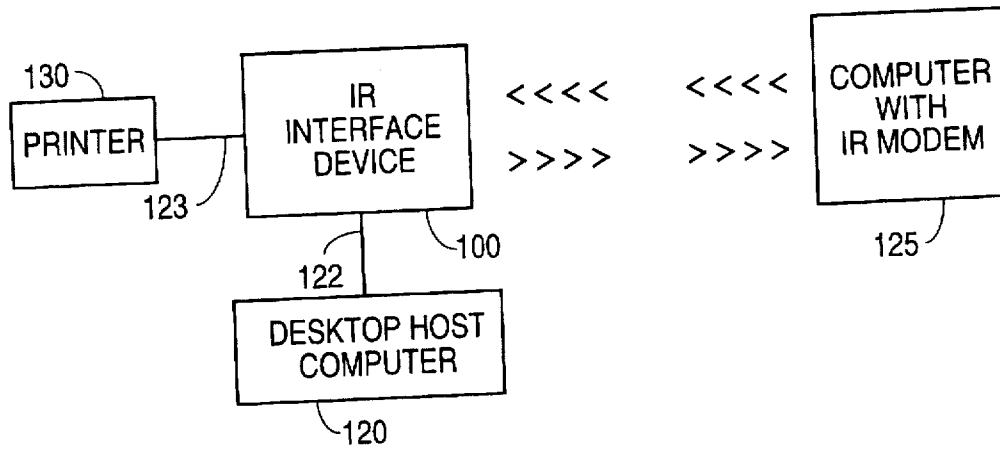


FIG. 1a

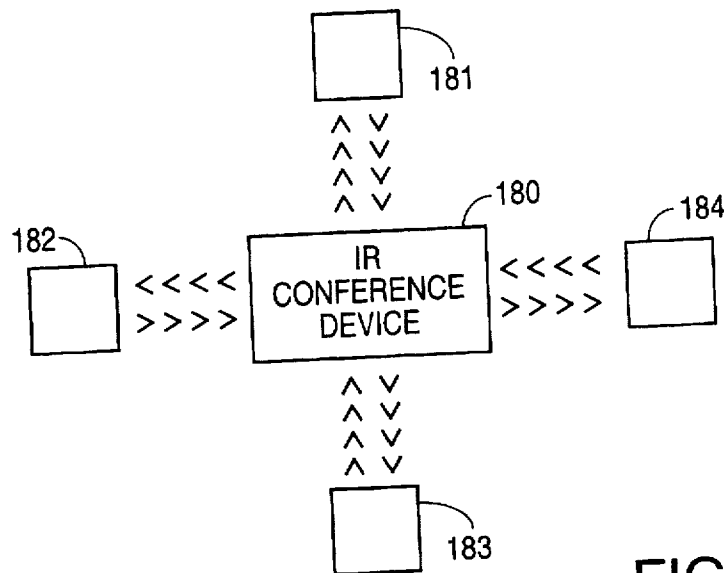


FIG. 1b

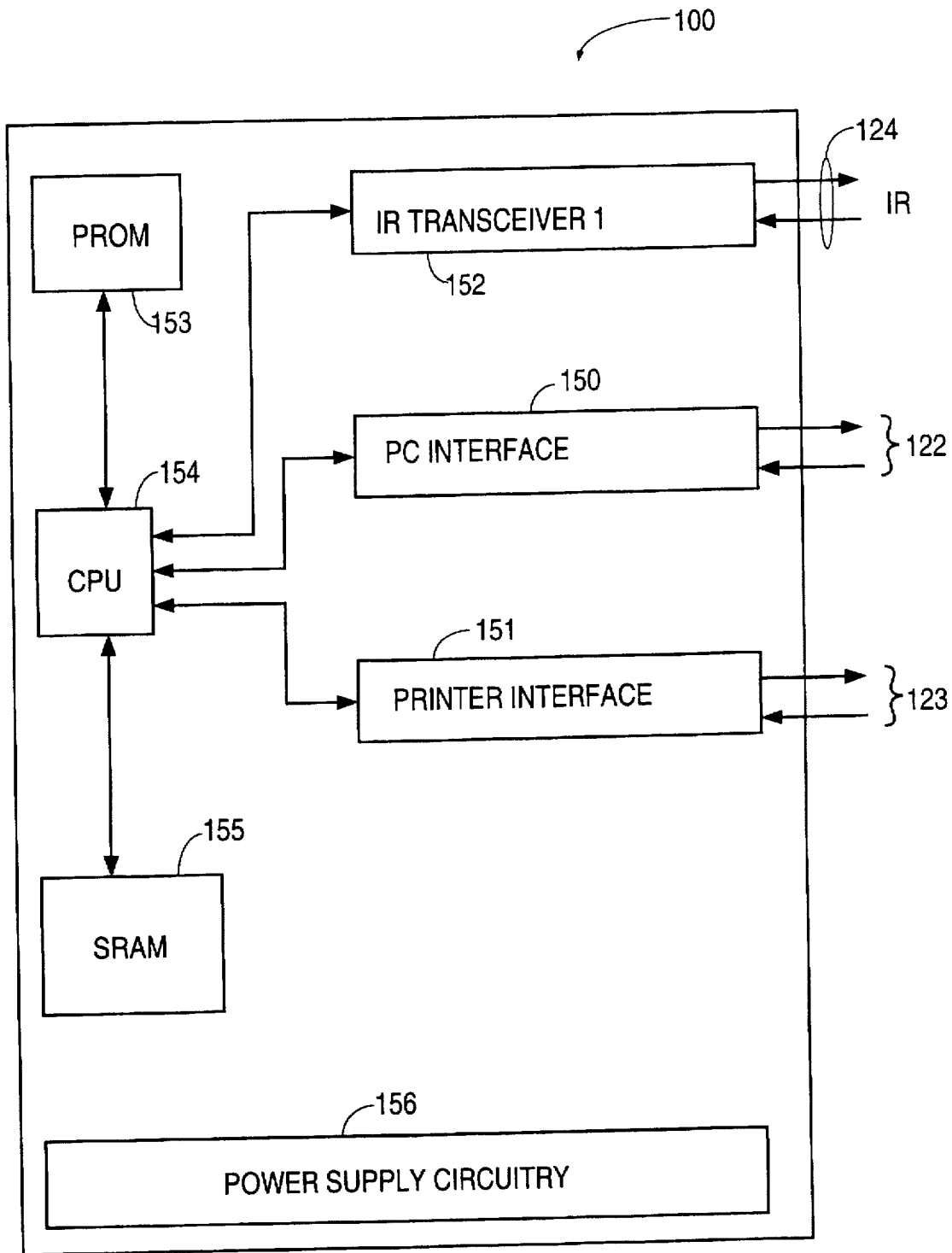


FIG. 2a

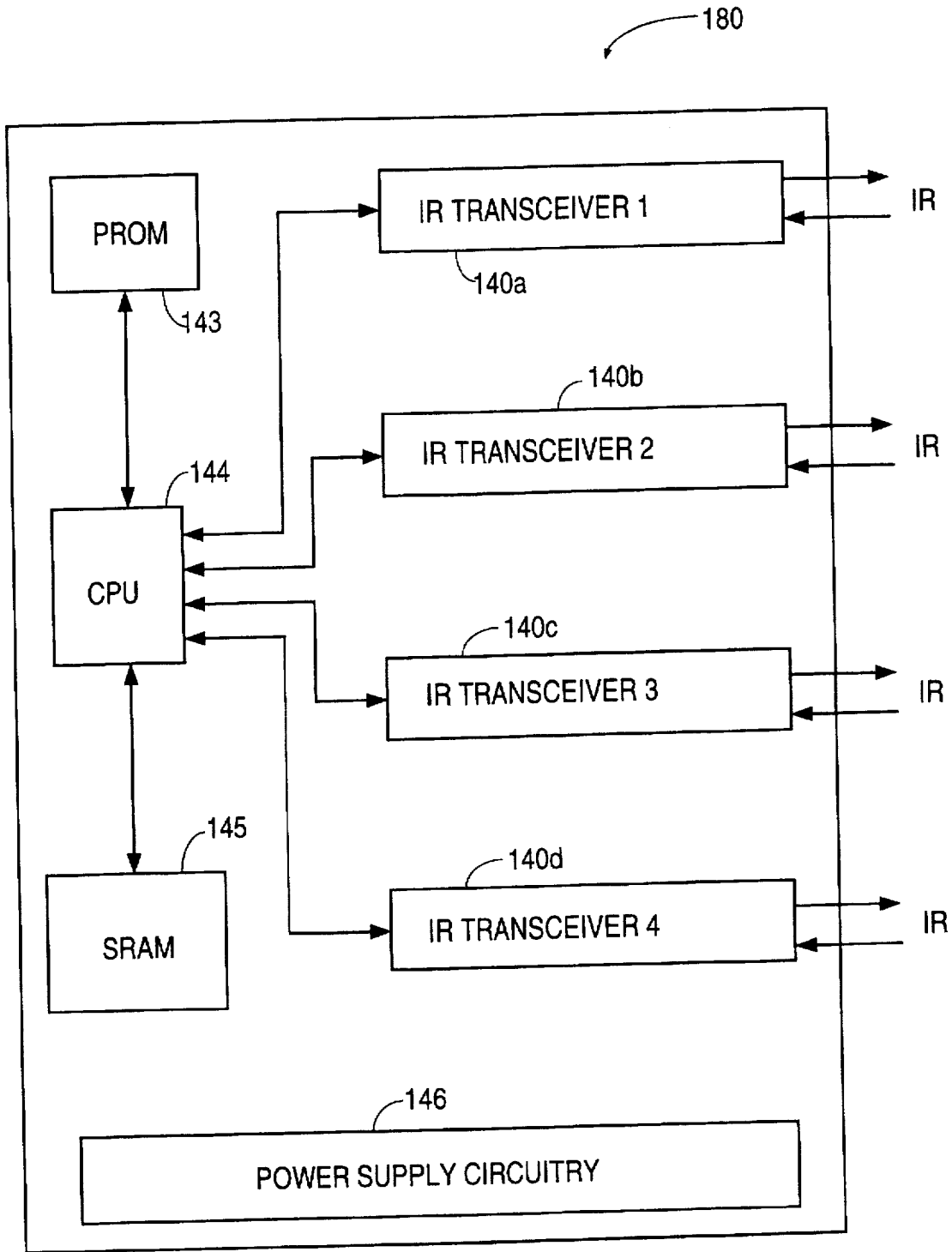


FIG. 2b

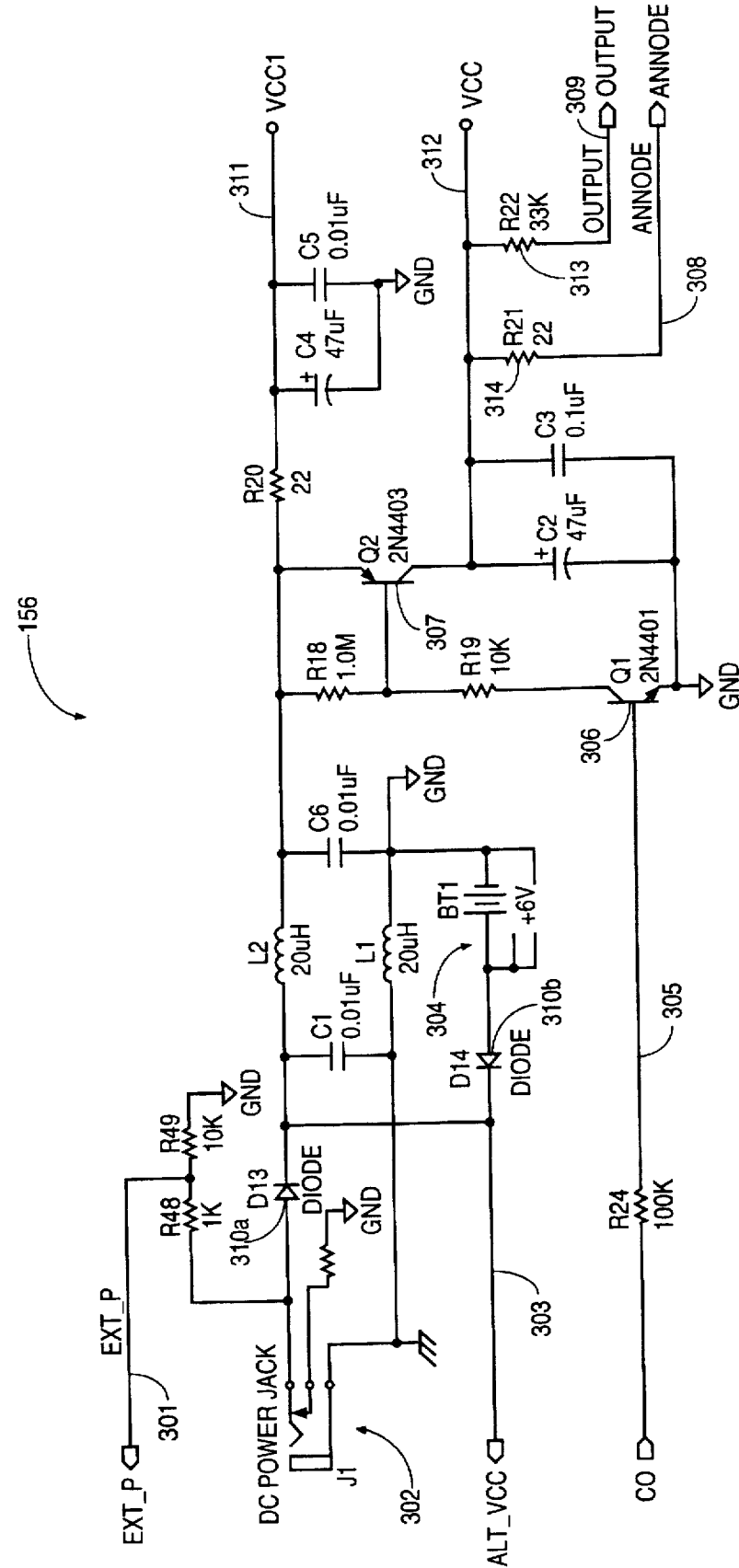


FIG. 3a

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