



# United States Patent [19]

Chien

[11] Patent Number: **6,011,753**

[45] Date of Patent: **Jan. 4, 2000**

[54] **CONTROL AND MONITORING OF DEVICES EXTERNAL TO A MARINE SEISMIC STREAMER**

4,967,400	10/1990	Woods	367/21
5,058,080	10/1991	Siems et al.	367/79
5,631,874	5/1997	Mastin et al.	367/15

[75] Inventor: **Loring C. Chien**, Katy, Tex.

*Primary Examiner*—Christine Oda  
*Assistant Examiner*—Anthony Jolly  
*Attorney, Agent, or Firm*—Gunn & Associates, P.C.

[73] Assignee: **Syntron, Inc.**, Houston, Tex.

### [57] ABSTRACT

[21] Appl. No.: **09/044,740**

A technique and a system provide control and monitoring of devices external to a marine seismic streamer by segmenting the conductor to which the external devices are coupled. The module which connects sections of the seismic data telemetry cable is modified to include a switch. The switch is controlled by a command signal on the seismic data telemetry cable to segment the twisted pair bus into a plurality of dedicated busses, each dedicated to a subset of the external devices, such as one or two such devices. In this way, the external devices can be communicated with in parallel, rather than in series as in conventional systems.

[22] Filed: **Mar. 19, 1998**

[51] **Int. Cl.<sup>7</sup>** ..... **G01V 1/22**

[52] **U.S. Cl.** ..... **367/21; 367/76; 181/110**

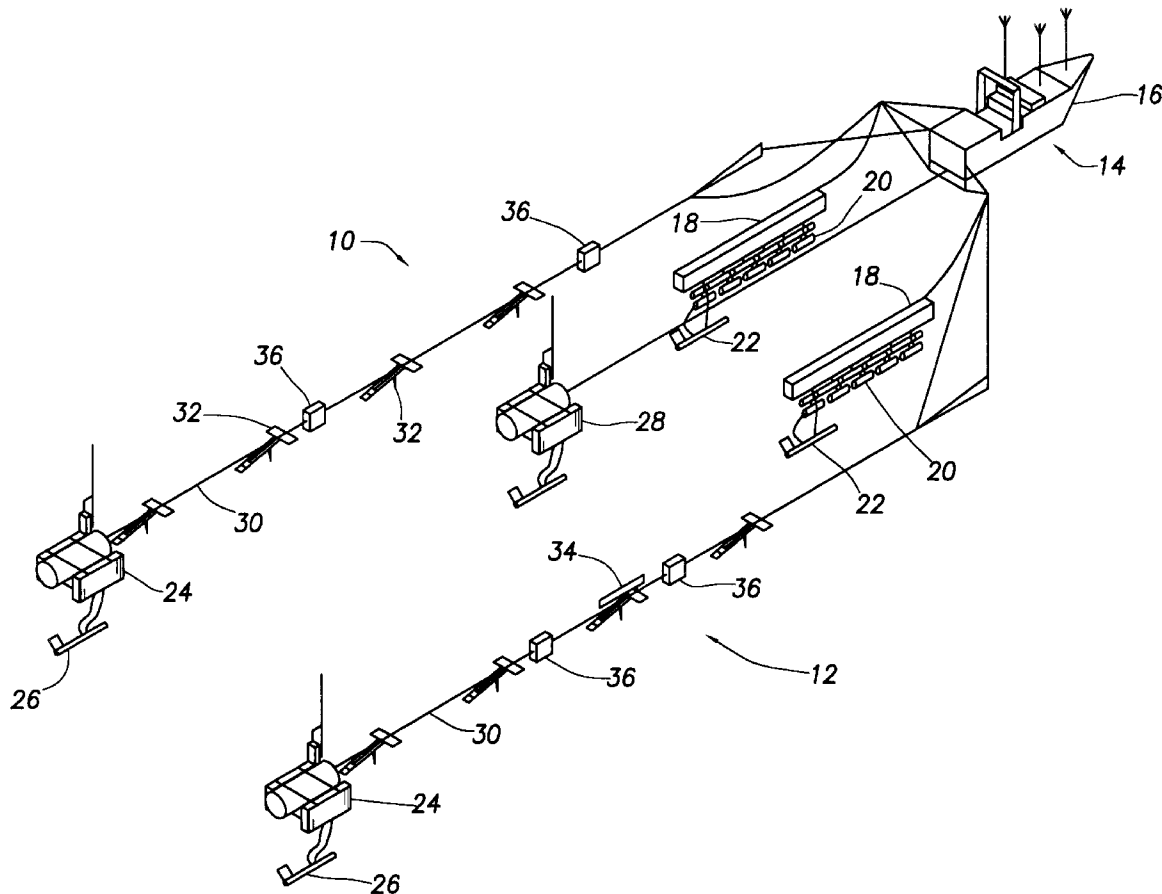
[58] **Field of Search** ..... 367/15, 16, 76, 367/21, 79, 78, 18, 20, 80; 340/854.1; 181/110, 112

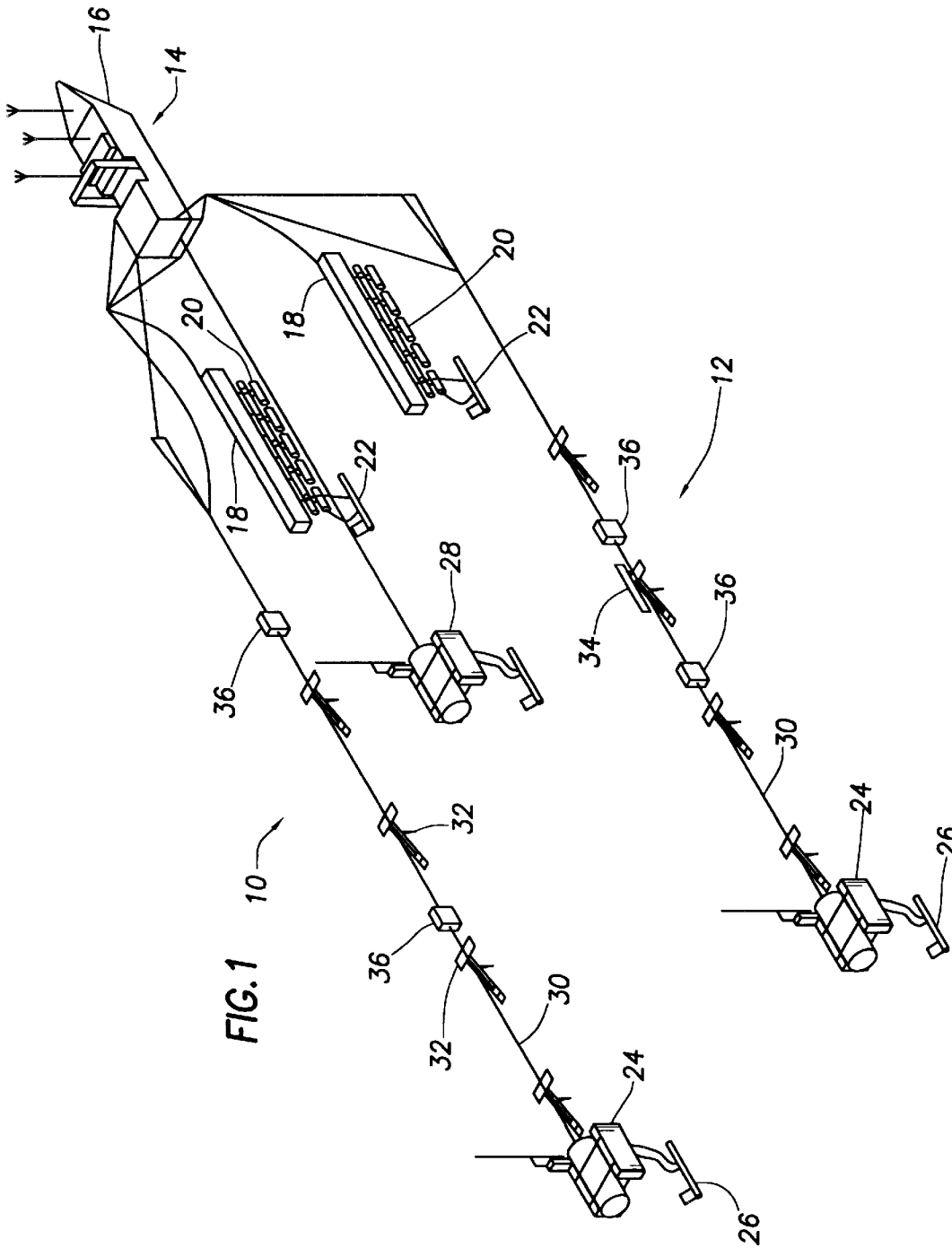
### [56] References Cited

#### U.S. PATENT DOCUMENTS

4,709,355 11/1987 Woods et al. .... 367/16

**18 Claims, 4 Drawing Sheets**





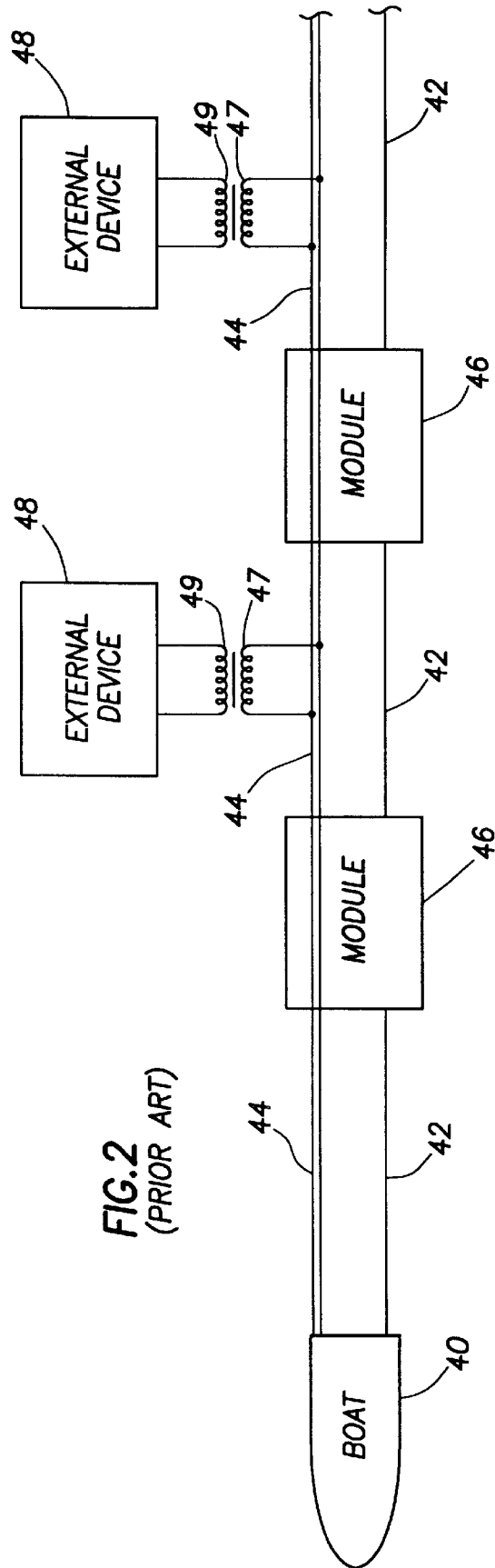


FIG. 2  
(PRIOR ART)

FIG. 3  
(PRIOR ART)

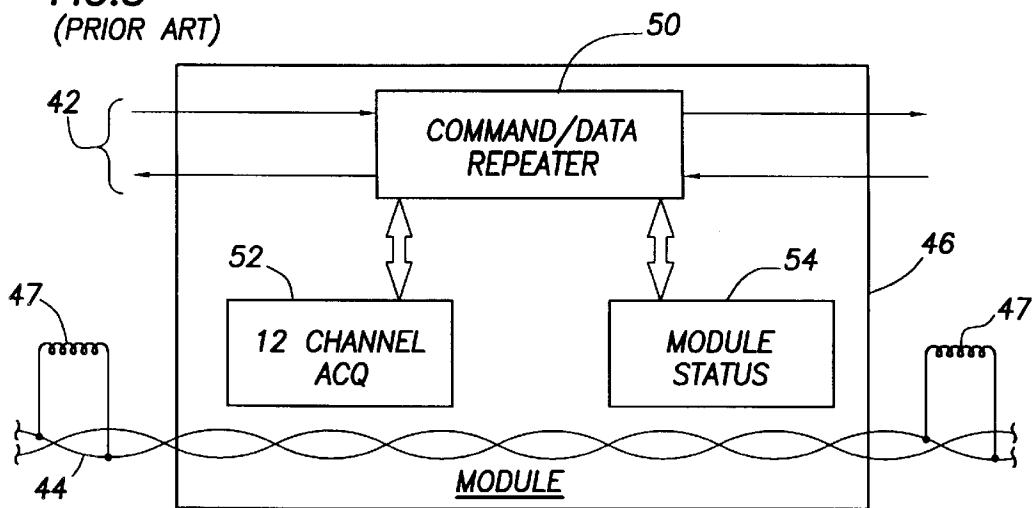
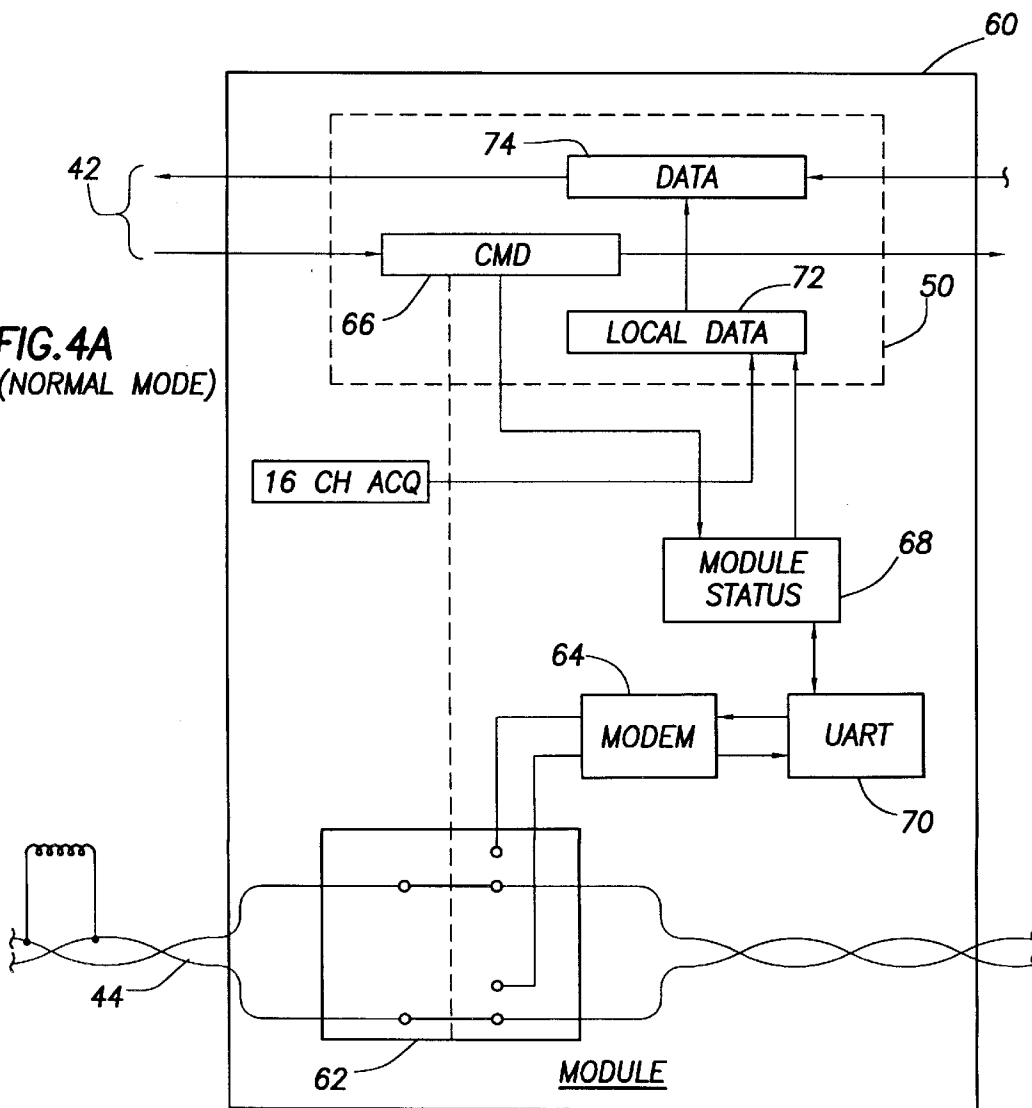


FIG. 4A  
(NORMAL MODE)



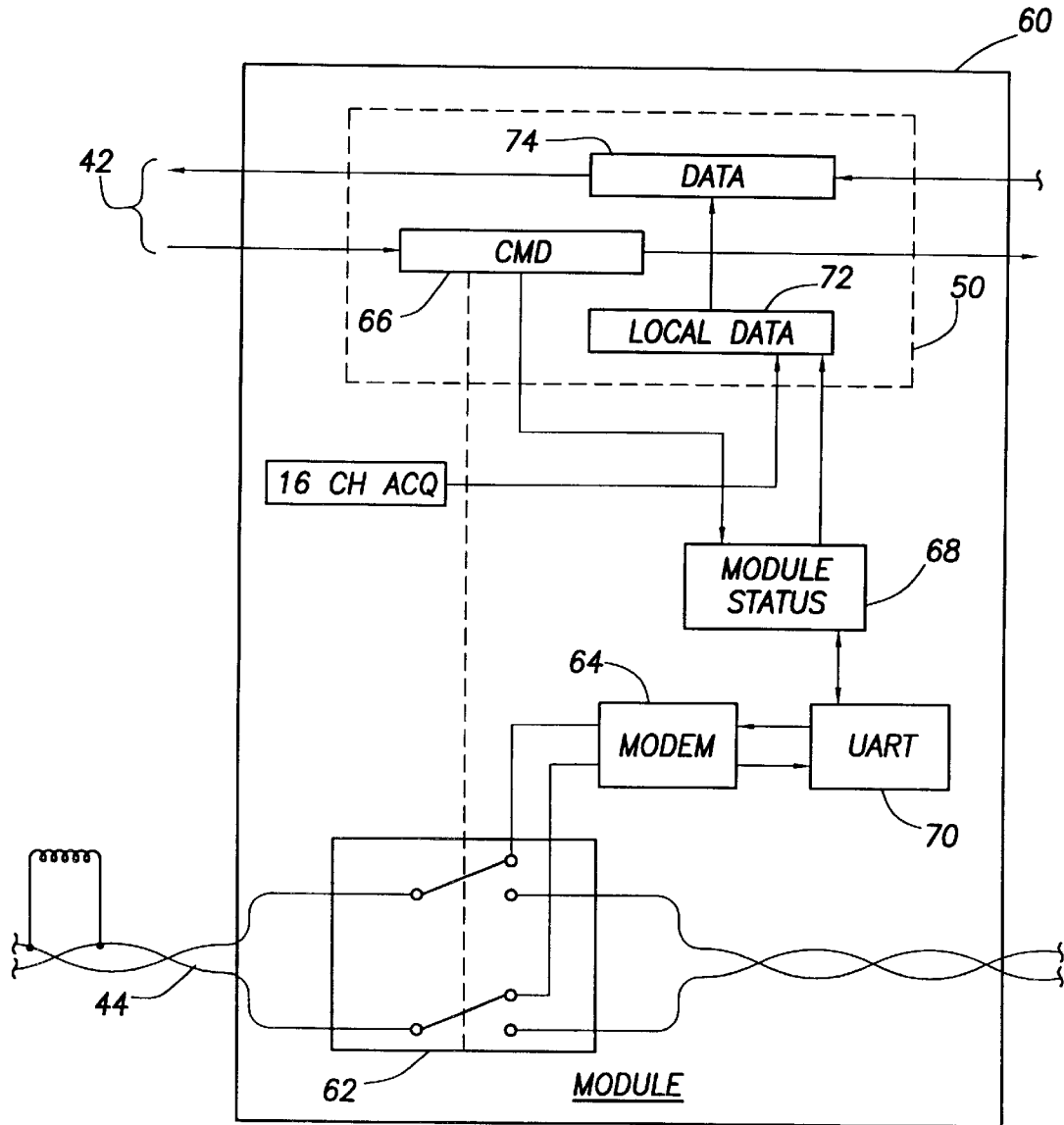


FIG. 4B  
(ENHANCED MODE)

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