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(12) **United States Patent**  
**Chang et al.**

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- (54) **TELECOMMUNICATIONS TRANSMISSION TEST SET**
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- (\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Disclosure Statement on behalf of Assignee Sunrise Telecom, Inc., with attached Declaration of Robert King, Vice President—North American Sales, Sunrise Telecom, Inc. Declaration of Paul Marshall, Chief Operating Officer, Vice President of Marketing and Acting Chief Financial Officer of Sunrise Telecom Incorporated, San Jose, CA, dated Mar. 3, 2004, pp. 1–3, with Exhibits A, B and C. Specialized Products Company, 1994 Spring Catalog, pp. 152, 168–169. Ironix Brochure, “T5000 EFP handheld Mobile Workstation,” undated. “Testing ATM Interoperability—HP Solution Note”, 5965–9334E Jun. 1997 Rev. A, 1997 ATM/Broadband Testing Seminar, Hewlett-Packard Company.

- (21) Appl. No.: **09/215,421**
- (22) Filed: **Dec. 18, 1998**
- (51) Int. Cl.<sup>7</sup> ..... **H04L 12/66**
- (52) U.S. Cl. .... **370/252; 370/248; 370/251; 370/247; 379/21; 379/10.01; 348/192; 714/715**
- (58) Field of Search ..... 379/21, 10.01, 379/22.04, 26.01, 26.02, 26.03; 370/245, 248, 249, 503, 252, 251, 250, 247; 324/512, 520, 521, 527, 528, 534, 535, 532; 348/192; 714/715

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(57) **ABSTRACT**

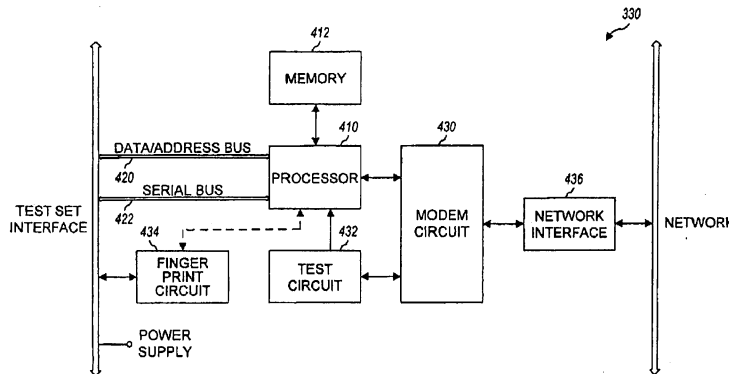
A test set includes at least one signal input port, a test circuitry, a processor, a user-input device, and a display. The test circuitry couples to and receives signals from the at least one signal input port. The test circuitry then generates test data corresponding to the received signals. The processor couples to and receives test data from the test circuitry and generates test results. The processor also couples to and receives commands from the user-input device. The processor further operatively couples to the graphical display that receives and displays the test results from the processor. In one embodiment, the test set is capable of performing line qualification and connectivity testing. A modem module can be used to facilitate connectivity testing. The modem module can be a plug-in module with a common interface to the test set. The modem module can also contain a fingerprint value that identifies the module type and the software revision number to the test set.

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20 Claims, 17 Drawing Sheets



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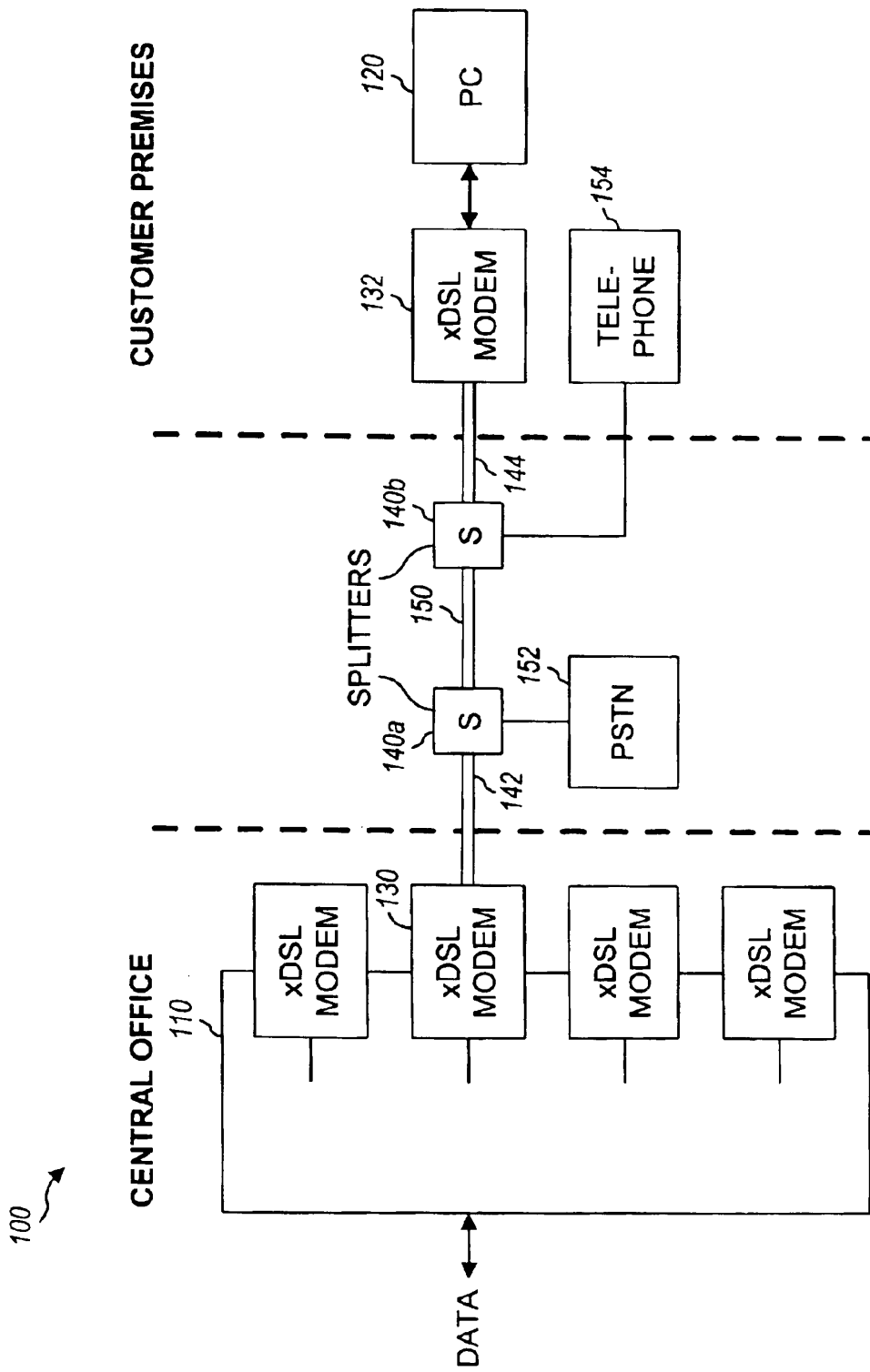


FIG. 1

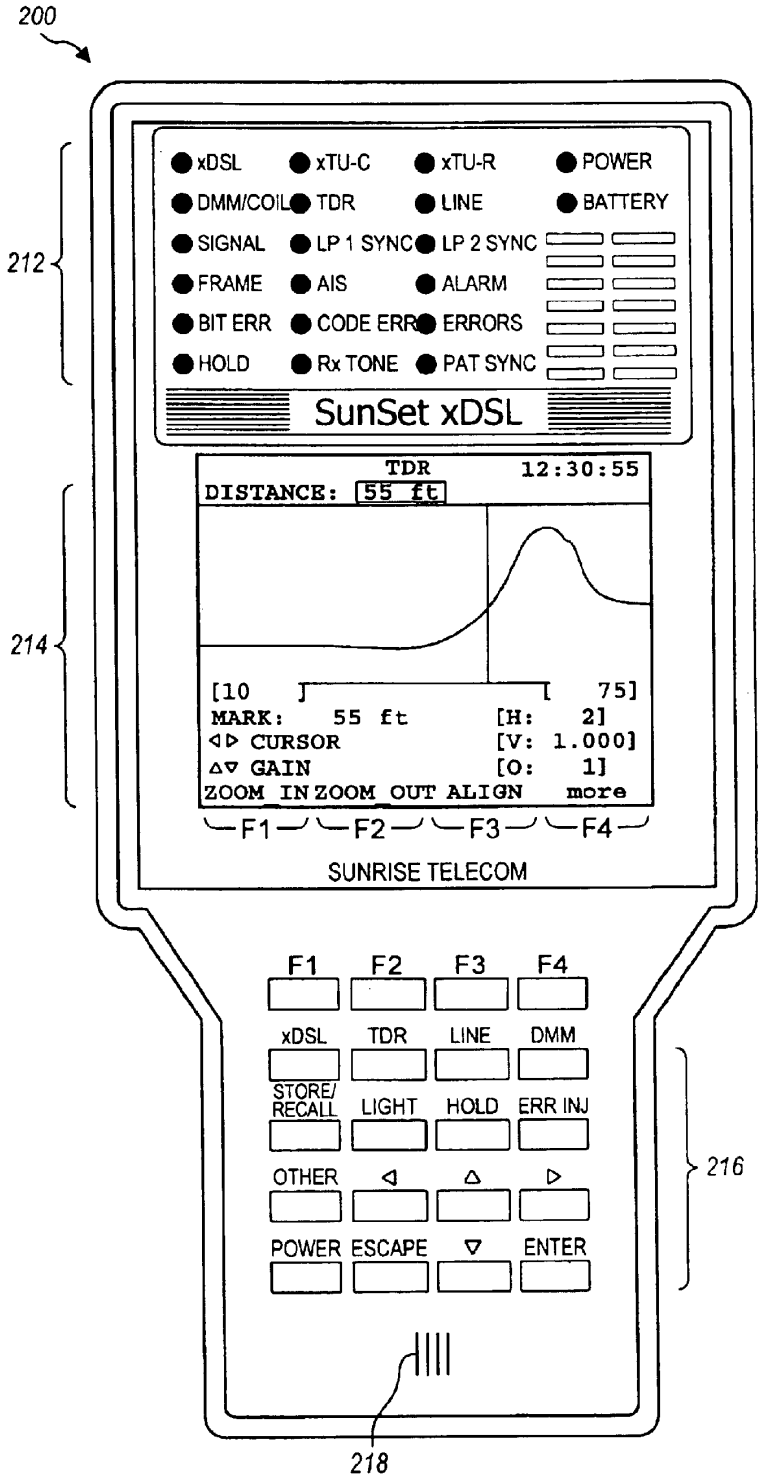


FIG. 2

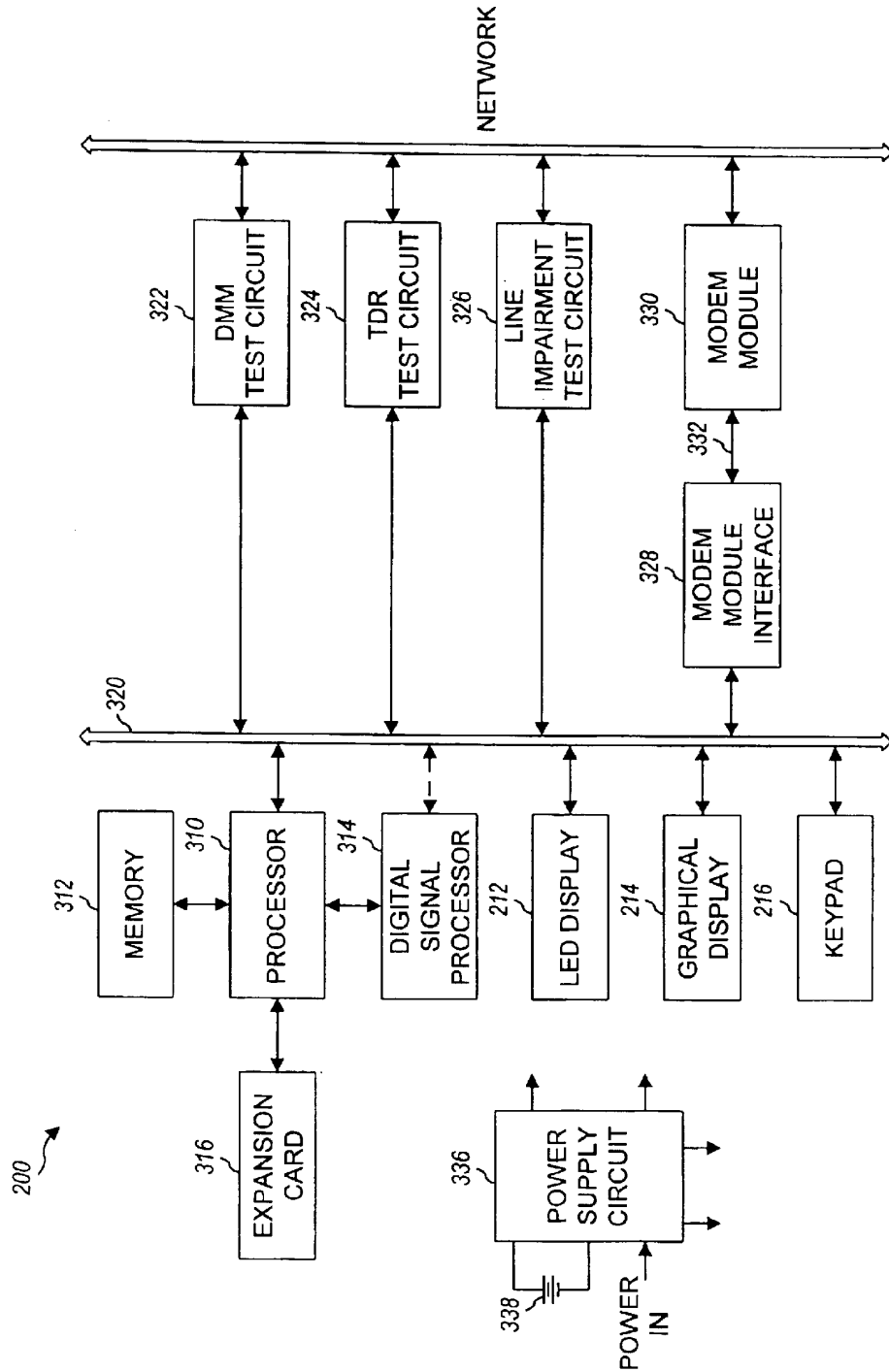


FIG. 3A

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