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(54) Title: TIME DIVISION DUPLEXED HIGH SPEED DATA TRANSMISSION SYSTEM AND METHOD

(57) Abstract

A method of coordinating very high speed bi-directional data transmissions between a central unit and a plurality of remote units over distinct twisted pair transmission lines that share a binder is described. Specifically, periodic synchronized upstream and downstream communication periods are provided that do not overlap with one another. The upstream and downstream communication periods for all of the wires that share a binder are synchronized. With this arrangement, all of the very high speed transmissions within the same binder are synchronized and time division duplexed such that downstream communications are not transmitted at times that overlap with the transmission of upstream communications. In some embodiments, quiet periods are provided to separate the upstream and downstream communication periods. The described invention may be used in conjunction with a wide variety of modulation schemes, including both multi-carrier and single carrier transmission schemes. It is backwards compatible with existing systems and has particular advantages in very high performance systems.



