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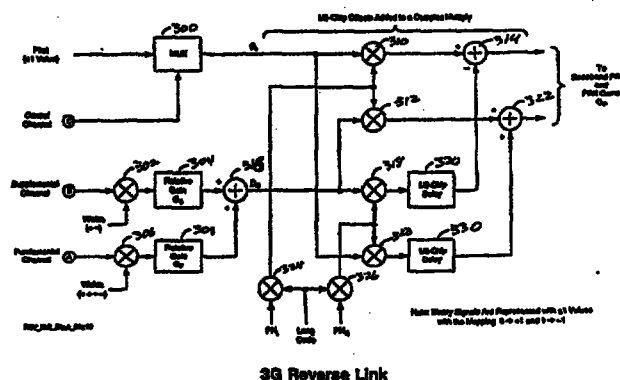
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(54) Title: A SUBSCRIBER UNIT AND METHOD FOR USE IN A WIRELESS COMMUNICATION SYSTEM



(57) Abstract

A set of individually gain adjusted subscriber channels (A, B, C, Pilot) are formed via the use of a set of orthogonal subchannel codes (Walsh++, Walsh+---) having a small number of PN spreading chips per orthogonal waveform period. Data to be transmitted via one of the transmit channels is low code rate error correction encoded and sequence repeated before being modulated with one of the subchannel codes, gain adjusted, and summed with data modulated using the other subchannel codes. The resulting summed data (316) is modulated using a user long code and a pseudorandom spreading code (PN code) and upconverted for transmission. The use of the short orthogonal codes provides interference suppression while still allowing extensive error correction coding and repetition for time diversity to overcome the Raleigh fading commonly experienced in terrestrial wireless systems. The set of sub-channel code may comprise four Walsh codes, each orthogonal to the remaining codes of the set. The use of four sub-channels is preferred as it allows shorter orthogonal codes to be used, however, the use of a greater number of channels and therefore longer codes is acceptable. Preferably, the pilot data and control data are combined onto one channel. The remaining two transmit channels are used for transmitting non-specified digital data including user data or signaling data, or both.