

SIGNAL PROCESSING APPARATUS AND METHOD**ABSTRACT OF THE DISCLOSURE:**

An integrated digital communication system utilizing multilevel vestigial sideband transmission is provided. The communication system receives a multi-level pulse-amplitude modulated digital signal from a limited bandwidth channel. The system includes processing stages which demodulate, sample and filter the incoming signal prior to recovery of the digital data. Other stages recover the timing and lock on to the frequency and phase of the transmitted signal, as well as provide for automatic gain control. An adaptive equalizer, error correction circuitry, and an output interface recover the digital data and provide for transfer to other devices.

FIGURE 4