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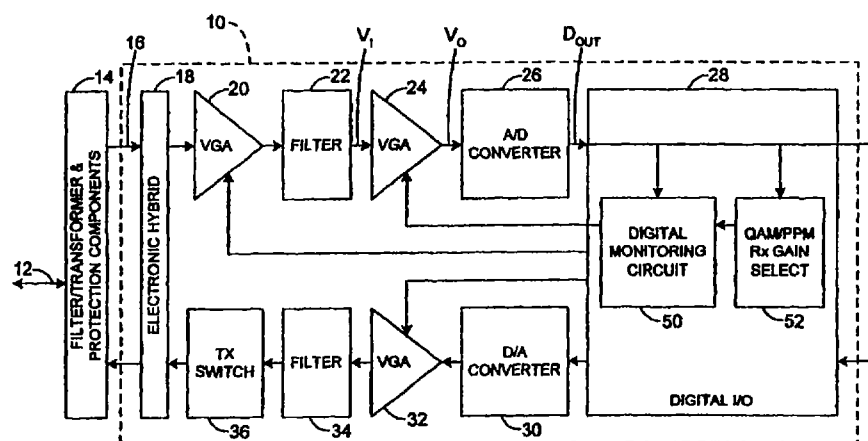
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(54) Title: **PROGRAMMABLE GAIN AMPLIFIER FOR USE IN A DATA NETWORK**



(57) Abstract: A data networking device having a variable gain amplifier with a first selectable impedance and a second selectable impedance for adjusting gain of the variable gain amplifier. The data networking device has an analog to digital converter for converting an analog output signal of the variable gain amplifier to a digital signal. The data networking device has a digital signal monitoring circuit for monitoring the digital signal and supplying feedback signals to actuate the first and second selectable impedances as a function of the digital signal, thereby adjusting the gain of the variable gain amplifier. A method of controlling a variable gain amplifier is also disclosed. An analog output signal of the variable gain amplifier is converted to a digital signal by an analog to digital converter. The method includes determining a portion of dynamic range of the analog to digital converter being used to convert the analog output signal of the variable gain amplifier. The method includes providing a first feedback signal to a first selectable impedance and providing a second feedback signal to a second selectable impedance, the first and second feedback signals adjusting the gain of the variable gain amplifier to increase the dynamic range used by the analog to digital converter.

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