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(54) **HAPTIC DEVICES USING ELECTROACTIVE POLYMERS**

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(57) **ABSTRACT**

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**Related U.S. Application Data**

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Haptic feedback interface devices using electroactive polymer (EAP) actuators to provide haptic sensations and/or sensing capabilities. A haptic feedback interface device is in communication with a host computer and includes a sensor device that detects the manipulation of the interface device by the user and an electroactive polymer actuator responsive to input signals and operative to output a force to the user caused by motion of the actuator. The output force provides a haptic sensation to the user. Various embodiments of interface devices employing EAP actuators are described, including embodiments providing direct forces, inertial forces, and braking forces.

