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(54) **HAPTIC DEVICES HAVING MULTIPLE OPERATIONAL MODES INCLUDING AT LEAST ONE RESONANT MODE**

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(57) **ABSTRACT**

An electronic device and method of operating comprises a housing; a base coupled to the housing; and an electro-mechanical transducer coupled to the base, the electro-mechanical transducer configured to operate in a resonant mode and output a haptic effect upon receiving a drive signal at a predetermined drive frequency. In an embodiment, the electro-mechanical transducer further comprises a plurality of electro-mechanical transducers, each electro-mechanical transducer configured to operate in its respective resonant mode and output a respective haptic effect upon receiving a drive signal having a predetermined drive frequency. Alternatively or additionally, the electro-mechanical transducer further comprises a plurality of spaced apart electro-mechanical devices coupled thereto in a serial fashion between a first end proximal to the base and a second end distal to the base.

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(63) Continuation of application No. 10/792,279, filed on Mar. 4, 2004, now Pat. No. 7,369,115, which is a continuation-in-part of application No. 10/301,809, filed on Nov. 22, 2002, now Pat. No. 7,161,580.

