Surface haptic interactions with a TPad tablet

TPAD tablet hardware tactile feedback ultrasonic vibration

【Main Content】: A TPad Tablet is a tablet computer with a variable friction touchscreen. It can create the perception of force, shape, and texture on a fingertip, enabling unique and novel haptic interactions on a flat touchscreen surface. We have created an affordable and easy to use variable friction device and have made it available through the open-hardware TPad Tablet Project. http://tpadtablet.org

【TPad Fire】:

TPad Fire is the first generation of the TPad tablet project [6]. It is a 200mm x 140mm x 43mm handheld device with a total weight of 850g. It consists of a TPad variable friction surface, a Kindle Fire ™ tablet, a printed circuit board, a 6600 mAh battery, and a protective plastic case.

Application 1: Remote Touch

A remote touch application that attempts to take advantage of the personal and emotional aspects of touch. When a user places his finger on the screen, it is displayed visually and tactilely on the screen of the other user, and vice versa, thereby conveying a sense of presence and connection throughout the distance.

Application 2: Haptic Canvas

The second is a haptic sketch application that attempts to lower the barrier to designing haptic effects while also allowing rapid iteration of the prototype. With this application, users can design haptic effects without any programming. Users can draw directly on the screen with their fingers and immediately feel what they have drawn.

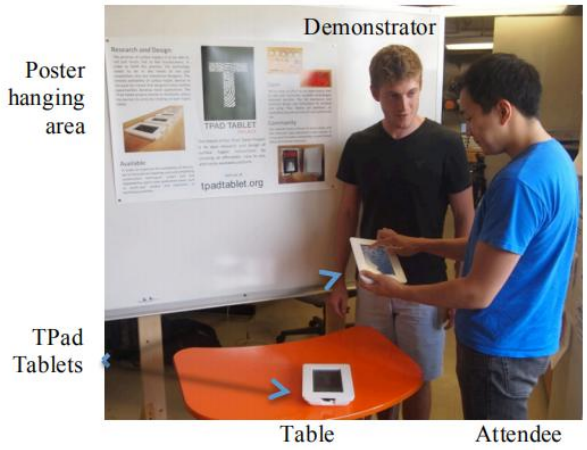

Figure 1: Demonstration Setup

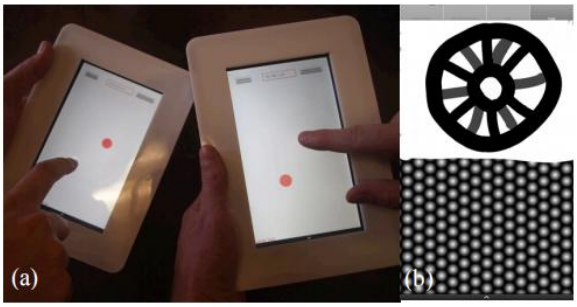

Figure 2: (a) Remote Touch App, (b) Haptic Canvas App showing a hand sketched haptic prototype with low friction (white) and high friction (black) areas.