Short Comment Regarding a Proposed Exemption
Under 17 U.S.C. 1201

Item 1. Commenter Information
Name: Hans Nielsen. Organization: The Exploiteers (https://www.exploitee.rs/).

Item 2. Proposed Class Addressed
Proposed Class 20: Jailbreaking—Smart TVs

Item 3. Statement Regarding Proposed Exemption
We are a group of hobbyist security researchers who gain full access to devices including smart TVs (Vizio P series, Sony NSX-GT1 series) and streaming media players (Logitech Revue, Sony NSZ-GT1, Google Chromecast, Boxee Box). Streaming media players should be part of class 20 because they offer nearly identical functionality to smart TVs, and are more common. Available devices in this category (save the Nexus Player) are locked-down, requiring circumvention to view legally-obtained media. The Nexus Player is more open, but it is a recent introduction with no guarantee it will continue to be sold, given Google's history of rapidly discontinuing devices.

Streaming media players and smart TVs have the same basic hardware components as desktop and laptop computers. Most of them run Linux and heavily leverage the existing open-source software ecosystem, including off-the-shelf solutions such as Android. The technological protection measures used are often signature checks added to open-source bootloaders (such as U-Boot) to prevent unauthorized software from executing during the boot process. The authorized software is engineered to only accept code from the original manufacturer.

The original Google TVs (Logitech Revue and Sony NSZ-GT1 / NSX-GT1) did not allow any external code. We circumvented the technological protection measures, giving users developer access, including the ability to install standard Android applications and develop their own.

We want to be able to run the latest software on our streaming media players and smart TVs. Manufacturers often abandon these devices well before their useful life has ended, leaving users with perfectly-functioning hardware but out-of-date software, missing both features and security updates. For instance, the Boxee Box is a device that has been wholly abandoned by the manufacturer. We provided a method to install XBMC (a media player frontend, allowing users to play their own legally-obtained content), extending the lifetime of this hardware.

We want to be able to view all kinds of legally obtained media on our devices. Legitimate online streaming services (such as Hulu) are blocked by software measures for contractual and anti-competitive reasons. These restrictions only apply to smart TV and streaming devices. As part of the original Google TV jailbreaking process, we enabled users to have full access to any website by altering the browser and Flash player to tell websites that it is a normal computer.

We want to access files shared over the local network, but many streaming media players and smart TVs do not have this capability despite having network connectivity. Of the handful that do, they use less common sharing protocols, such as DLNA (which requires installing unreliable third-party software on OS X and Linux) instead of the built-in file sharing services. The Google Chromecast is another locked-down device we circumvented the protections on, re-enabling streaming of legally-obtained content from the local network without a web browser (after this feature had been disabled by Google), and allowing the development of custom software.