**Results**

To determine the vulnerability of different devices, we attempted to replicate bad USB attacks on MacBooks, iPhones, and iPads.

**MacBook Results**

For the MacBook M1 Air operating on Big Sur 11.2.3 the keyboard assistant popped up as soon as the WIFI Duck was plugged into the laptop. This would not be optimal during an attack as it would alert the user that a foreign, potentially malicious, device has been connected. Someone who plugs their MacBook into a port to charge would not expect such a message to pop up, hence raising suspicion. In comparison, for the MacBook M1 Air on … the WIFI Duck was not detected as the user was not alerted in anyway. The code ran without interruption and a “secret file” was downloaded without the user’s knowledge. We suspect the different results may be based on different security measures of the different software versions and also based on the security setup of different users. Some users may give externally connected devices instant permission compared to others.

**iPad Results**

When the WIFI Duck was connected to the iPad, the code ran immediately without any form of detection. For this test we were able to send a message to one of the user’s contacts. In a real scenario, an attacker can use this to ask for personal information on behalf of the user.

**iPhone Results**

Fortunately, none of the iPhones were compromised when it was plugged into the USB port. This could be due to increased security on Apple’s part for the iPhone compared to the iPad and the MacBook. It is also possible that the differences in hardware for the iPhone compared to the iPad or MacBook renders the WIFI Duck incompatible. These results work in favor of the user as cell phones tend to house a user’s most private information.

**Table showing results gathered from testing different Apple devices.**

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| --- | --- |
| **Device Tested** | **Results** |
| Ipad (Version and software) | Code ran immediately. No pop ups or device detection. |
| MacBook M1 Air (MacOS Big Sur 11.2.3) | WIFI Duck initially detected as keyboard. Keyboard assistant popped up. |
| MacBook Air?? | Code ran immediately. No pop ups or device detection. |
| Iphone 8 (iOS 14.7.1) | Attack unsuccessful. |
| Iphone 12 () | Attack unsuccessful. |
| Iphone 13 (iOS 16.0) | Attack unsuccessful. |