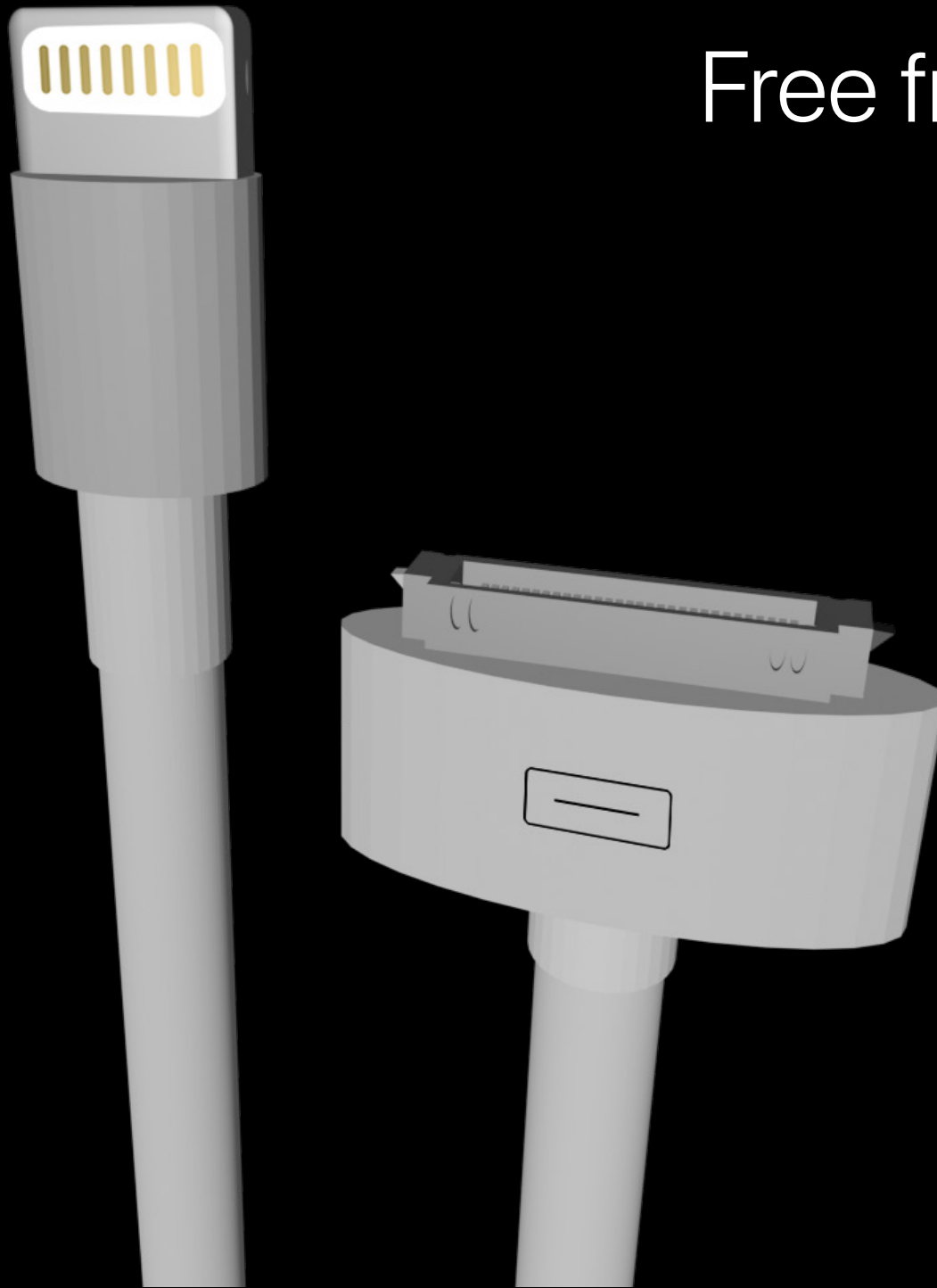


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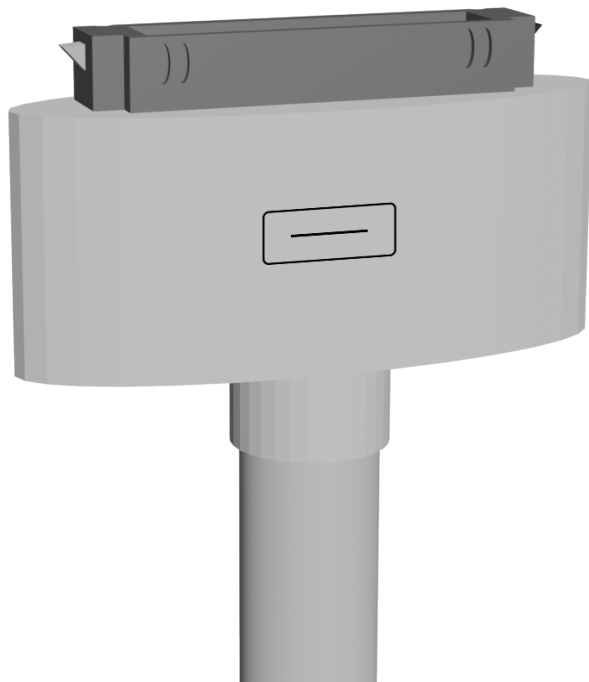
Free from Tangles

An insight on Apple's cable history
and the future it leads to.



Free from Tangles

Zayn Faitrouni



In 2007, Apple released the 'iPhone', a touch screen device with a headphone jack at the top and a 30 pin charger connector at the bottom. Flash forward to today and we have devices like the iPhone XS, an all screen device with no headphone jack, and a charger that is now 80% smaller.

Introduced in 2003, the 30 pin connector was Apple's newest way to connect to their future devices. Its design supported video/audio out, giving way for stereo systems, clock radios, and other 'dockable' devices. It also meant that basic things like charging, data transfers, etc. were faster and more efficient than ever.

However, there were a few drawbacks. Its shape meant that it was not reversible, making it less convenient to use quickly. It also required more space so there was less room for other components like the battery. 8 of the pins were devoted to an older type of connector called 'FireWire', during the life span of the 30 pin

connector, these 8 FireWire pins become entirely obsolete.

With technology allowing for smaller and smarter connectors, 8 pins made redundant and the growing need for more internal space for other components; Apple was in need for a new connector and soon they would have it.

The change was announced in 2012 with the arrival of the iPhone 5, a new 8 pin charger that condensed the 30 pin charger and eliminated redundant components. The 'Lightning' charger was able to be used on either side of its connector, a huge improvement to its accessibility and convenience. It condensed charging, Audio/video out, data transferal, ground pins and more all into 8 tiny conductive strips. With HDMI, VGA SD Cards now supported, the Lightning connector gave more power to utilise their devices like never before. Later in 2016, Apple removed the headphone jack from the iPhone 7 and future devices. Used to further increase

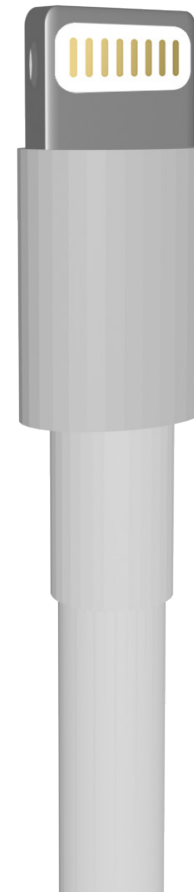
room for internal components, Apple now sells earphones with a lightning connector and capitalised on the change with bluetooth earphones called 'AirPods'.

But even with such small and powerful connectors, the future is looking to remove the need for one at all. In 2017, the iPhone 8 was released with a new 'Induction Charging' feature. This was a way to charge your iPhone without connecting any cables into the device, rather, you can lay your device onto a charging pad and your device begins to charge! This works via a coil in the pad creating a magnetic field which is 'in-sync' with a coil in your device, currently the technology isn't very efficient but as research continues on the subject, it will only get better.

Apple is clearly moving towards a future with no cables needed, their iCloud services create a feeling of synchronicity

between their devices. For example, on one device you can copy a piece of text and then from another you can paste that same text. iTunes allows for wifi synchronisation, airplay means that your devices can stream content onto another supported device without the need for a connecting cable, and iCloud Drive enables files on your Mac to be viewed and edited from your other devices.

From the bulky 30 pin connector with limited compatibility, to the Lightning connector with a seemingly unlimited range of supported inputs. Apple now is pushing a new age of cables, one where it becomes an option that can be ignored in favour of the wireless alternatives.



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30 Pin Connector Breakdown

Audio In/Out:

- Pin 2 - Audio ground
- Pins 4, 3 - Line Out
- Pins 6, 5 - Line In

Analog Video Out:

- Pin 8 - Composite video out
- Pins 9, 10 - S-Video out

Serial port:

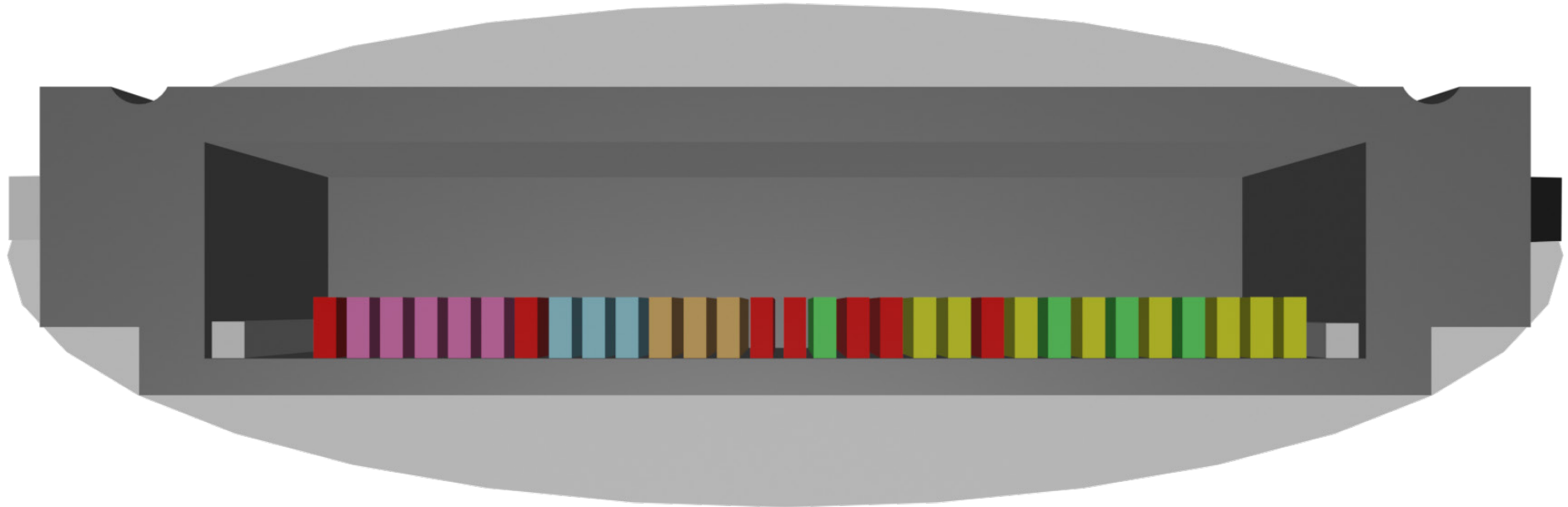
- Pin 11 - Ground
- Pin 12 - TX
- Pin 13 - RX

USB:

- Pins 16, 23 - 5V, Ground
- Pins 25, 27 - D+, D-

Firewire:

- Pins 19, 20 - 12V
- Pins 22, 24 - TPA+, TPA-
- TPB+, TPB-: 26, 28
- Ground: pins 29, 30



Others:

- Pin 1, 15 - Ground
- Pin 7, 14, 17 - Reserved
- 3.3V accessory power: pin 18
- Accessory detect: pin 21