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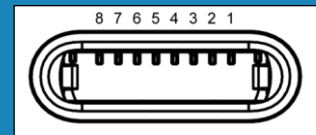
Lightning Cable

For the free video please see
<http://itfreetraining.com/ap/1c25>

In this video from ITFreeTraining, I will look at the lightning cable. The lightning cable is a proprietary cable released by Apple. This cable replaces the previous cables that were used to connect and charge Apple mobile devices.

Lightning Cable

- Introduced in 2012
- 16 pin cable that plugs into 8 pin plug
- Can be plugged in either way
- USB 2.0 480Mbps (No official specifications)



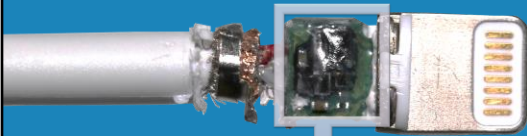
0:14 The lightning cable was introduced in 2012 by Apple. The lightning cable is designed to be used by Apple devices. The lightning cable is a 16-pin cable that essentially plugs into an 8-pin plug. This was designed to replace Apple's existing larger 30 pin cable used with older devices.

The lightning cable is designed so that it can be plugged in either way. Later in the video I will have a look at how this is made possible.

Apple has not released the specifications for the lightning cable, so it is difficult to determine how fast the cable operates at. The lightning cable can be plugged into USB, when this occurs it runs at a USB 2 speed of 480 Megabits per second. So, this gives us some idea of how fast it runs. If you need faster speed than this, you should look at Thunderbolt or USB 3 connections.

To understand how the lightning cable works, let's have a look inside one.

Inside the Lightning Cable



Number of chips
in the cable

Chips authenticate
devices

Only approved devices
can be used

Non-Apple cable

Maybe lesser quality

Devices charge slower

1:11 In this case, I have taken a genuine Apple lightning cable and removed the plastic and metal casing from around the end of the cable. Inside the cable is a small circuit board with some microchips on it. On this chip, there is a lot of glue; I attempted to remove as much glue as I could, but I was not able to remove it all.

When the cable is used to plug into a device, the chips on the cable authenticate the device. This essentially means that only approved devices can be used with the cable. If you attempt to use a non-approved device, it will not work. This means two things. First, only approved Apple devices can be used with the cable. Second, only a cable made by Apple can be used. Well, at first this was the case.

The chips inside the lightning cable have been reverse engineered, so you can now purchase a non-Apple lightning cable. The non-Apple cables may be of lesser quality though. You get what you pay for. In the case of the non-Apple cables, besides having a lot less glue, there was no metal internal casing to protect the chip. Essentially this means this cable may get damaged easier than the Apple cable.

You may also notice that a non-Apple lightning cable may charge devices slower than an Apple lightning cable. Generally, this is because a lower quality cable uses lower quality materials that don't push the power through as well. There are cables that you can purchase through Apple or approved by Apple and these will come in different types.

Cable Types



USB to lightning



USB-C to lightning



USB to lightning/USB-C/Micro USB

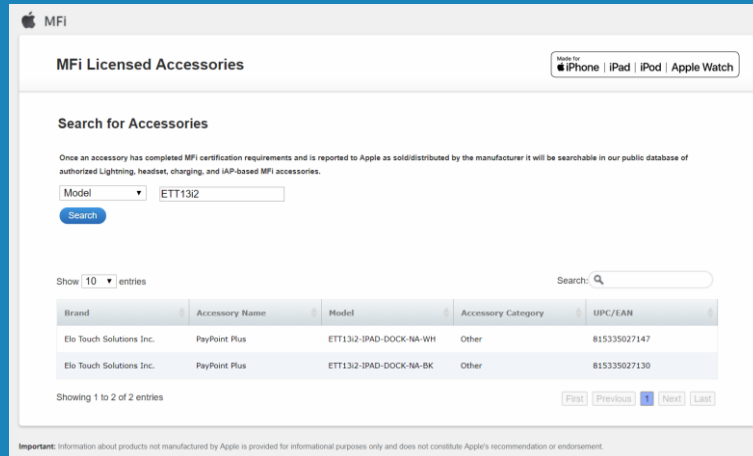
2:44 Apples sells two types of lightning cables. These are USB to lightning and USB-C to lightning. There are a lot of non-Apple cables that can be purchased, for example this cable that supports USB to either lightning, USB-C or micro USB.

If you purchase a non-Apple cable, your results may vary. Some cables may work really well, others may be unreliable or charge your devices slower than the Apple cable.

MFi

Made for
iPhone | iPad | iPod | Apple Watch

- <https://mfi.apple.com/MFiWeb/getAPS.action>



3:13 In order to determine what has been approved by Apple and what has not, Apple came up with the MFi program. This stands for Made for iPhone/iPod/iPad. If you see this on the packaging or the Apple logo then the product is approved by Apple.

There is also a web page, provided by Apple, which you can check to see if the product you are using has been approved by Apple. This web page will allow you to search for your device to determine if it has been approved by Apple or not. There are products on the market that have not been approved but may have packaging that suggests they are. You get what you pay for in a lot of ways, but you don't want to pay extra for a product that has not been approved. Approved products have to meet a certain quality standard in order to get approved. You don't want to pay more for a low-quality product.

That concludes this video on the lightning cable. I hope you have found this video informative. Until the next video, I would like to thank you for watching.

References

"The Official CompTIA A+ Core Study Guide (Exam 220-1001)" Chapter 3 Lesson 10510-10592 "Lightning (connector)" [https://en.wikipedia.org/wiki/Lightning_\(connector\)](https://en.wikipedia.org/wiki/Lightning_(connector))

Credits

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