

*Cypher Labs*®



# Theorem 720 DAC

The Theorem 720 DAC® delivers uncompressed, high quality audio from iPod®, iPhone®, Mac® or PC to portable headphone amplifiers, or home audio systems. Some Android devices are also supported (see our website for more details <http://cypherlabs.com>)

Patent Pending CypherUltraUSB® technology automatically detects computers or Apple Devices and delivers high resolution audio at up to 24 bit / 192kHz.

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Made for

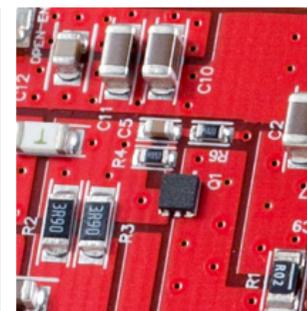
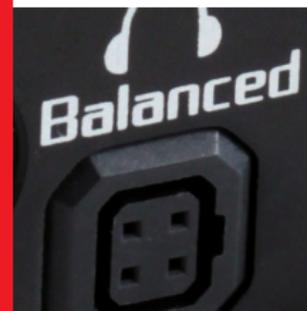


iPod



iPhone

Uncompressed. Uncommon. Unlocked.



### Multi-Source DAC with Automatic Device Detection:

Customers will appreciate our award winning portable audio products designed to unlock the high resolution features of the most popular digital music players from Apple and from both Mac and PC computers using our CypherUltraUSB® technology. Some Android devices also work – please see our website for details on Android connectivity. Use the Theorem 720 DAC® as a DAC with your computer and then simply change to the included sync cable to pair with any of a large list of Apple Devices.

### Leading Edge Technology:

We deliver high-resolution digital audio to your favorite audiophile equipment. Cypher Labs products are engineered and manufactured to the highest standards, featuring state-of-the-art processors, top of the line digital-to-analog converters, analog output stages, and audiophile-grade components throughout. They are powered via lithium-polymer battery technology for portability and clean DC power delivery. A built-in intelligent charging system offers ease of use to our customers, high battery cycle life and easy battery replacement.

### Stylish:

Along with unrivaled sound quality and cutting-edge features, the Theorem 720 DAC® is streamlined pure audio functionality, featuring precision machined aluminum and clean looking environmentally friendly packaging. Markings are laser etched into the enclosure as is a unique serial number.

### Easy to Carry:

The Cypher Labs Theorem 720 DAC® is lightweight and compact for travel and consists of an all aluminum body for maximum durability.

[www.cypherlabs.com](http://www.cypherlabs.com)



The Cypher Labs Theorem 720 DAC® streams bit-perfect digital audio from Apple iPhone® or iPod® devices to headphones. Two headphone outputs are provided to support single ended and balanced setups. A line level analog output is also provided to serve amplifiers, powered speakers or home audio equipment.

Supports Apple Mac® OS X 10.6.3 and above, and PC's  
with included driver, see website for details and free driver download

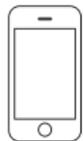
- ➔ Asynchronous conversion of the Apple USB output (*not a "pass through" of the line-out*)
- ➔ Listen to high quality movie audio on your video capable Apple Device or computer
- ➔ Charge Apple Devices while playing
- ➔ Long play time – up to 18 hours – begin and end with a fully charged Apple iPhone® or iPod®
- ➔ Full charge from AC power in under 4 hours

# Theorem 720 DAC

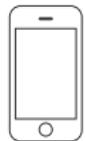


- ➔ 3.5mm (1/8") single end analog stereo output to headphones
- ➔ Mini-4 pin balanced analog stereo output to headphones
- ➔ 3.5mm (1/8") analog stereo out to amplifier (2.1vrms line level)
- ➔ High end 24 bit DAC
- ➔ Sample depth 16 bit from Apple Devices; up to 24 bit from computers
- ➔ Frequencies supported on Apple Devices: 44.1 / 48.0 @ 16 bit (96.0 supported on some iPad models)
- ➔ Frequencies supported on computers and Android devices: 44.1 / 48.0 / 96.0 / 88.1 / 176.4 / 192.0 @ 16 and 24 bit
- ➔ Dimensions 120mm x 64mm x 29 mm
- ➔ Weight 10.6oz or 0.3Kg

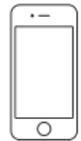
*Listening to loud audio over an extended time may damage your ears. Use caution. The Theorem 720 DAC is a power amplifier. Use the minimum gain and volume to achieve a comfortable and safe listening experience.*



**iPhone 3G**  
8GB 16GB



**iPhone 3GS**  
8GB 16GB 32GB



**iPhone 4**  
16GB 32GB



**iPhone 4S**  
16GB 32GB 64GB



**iPod touch**  
5th generation  
32GB 64GB



**iPod touch**  
4th generation  
8GB 32GB 64GB



**iPod touch**  
3rd generation  
32GB 64GB



**iPod classic**  
160GB (2009)



**iPod nano**  
6th generation  
8GB 16GB

Newer devices coming on the market from Apple should also work. Older devices, such as first generation iPod or older video iPod devices may yield unexpected results. However, behavior of Apple models not listed as supported may differ, especially in older models. iPod Classic 5th generation (sometimes called 5.5 or iMod versions) will NOT work – USB audio was not supported in those models.

Made for



**iPod**



**iPhone**





### How do I connect the Theorem 720 DAC to Apple Products?

Make sure to align the connection on the bottom of the iPod with the multi-pin metal connector located on the included synch to USB cable. Do not force the iPod connection or you may damage the multi-pin connector and damage your device. The USB end attaches to the Theorem 720 DAC. To remove the iPod from the Cypher Labs Theorem 720 DAC, grasp the iPod and pull on the cable head.

### Can I attach the Theorem 720 DAC to my computer's USB port and hear 24/192 quality music?

Yes, direct USB connection to your computer is supported, using the supplied USB-A to USB-mini-B cable. Apple Mac® OS X 10.6.3 and above natively support the Theorem 720 DAC. Windows based PC's require the Cypher Labs software driver. Download it from our website free of charge at [www.cypherlabs.com](http://www.cypherlabs.com). After installing the driver, or if using a Mac, attach the USB-A end of the cable to your computer and connect the USB mini-B end to the Theorem 720 DAC. Attach your headphones to the Theorem 720 DAC. Turn on the Theorem 720 DAC. Play music on the computer using iTunes or another player, particularly one that is capable of playing higher resolution files. You may need to select the Theorem 720 DAC as the default playback device in your computer's audio settings. Set the computer output volume to 100%.

# Theorem 720 DAC

Made for  
iPod iPhone



## How do I make the analog connection?

There are three analog outputs, all of which are active at the same time.

1. 3.5mm (1/8") single end analog stereo output to headphones
2. Mini-4 pin balanced analog stereo output to headphones
3. 3.5mm (1/8") analog stereo out to amplifier (2.1vrms line level)

Connect your chosen 1/8" (3.5mm) headphone plug to the headphone output of the Theorem. The output is marked with a headphone symbol on the Theorem to the left of the on/off volume knob.

Connect a 4 pin balanced cable to the Theorem 720 DAC –dB analog headphone.

Connect a 3.5mm mini cable to the Theorem 720 DAC analog line-level output to the corresponding analog input on a separate headphone amplifier or other analog input device, such as a home stereo.

Make sure to align the connection on the bottom of the iPod with the multi-pin metal connector located on the included synch to USB cable. Do not force the iPod connection or you may damage the multi-pin connector and damage your device. The USB end attaches to the Theorem 720 DAC. To remove the iPod from the Cypher Labs Theorem 720 DAC, grasp the iPod and pull on the cable head.

## Always make the connection in this order:

1. Make sure the Theorem 720 DAC® is turned off
2. Attach all cables, connect the USB cable to the Apple device and to the Theorem 720 DAC
3. Turn on the Apple device, if not already on
4. Turn on the Theorem 720 DAC®

## How do I connect the Theorem 720 DAC to AC power?

Check to make sure that the power cord shipped with your Theorem 720 DAC has been manufactured for operation at your AC line voltage or that you are using the proper plug adapter for your country. Damage caused by improper operation is not covered by Cypher Labs warranty.

## Can I attach the Theorem 720 DAC® to my Android device and hear 24/192 quality music?

In some cases, yes. There are a great number of Android devices and operating systems in use. It is impossible to test even a small fraction of them. Our website contains more details on which models and methods are currently working. The Android devices act in a manner similar to the computer, using USB Audio. Charging of Android devices is not supported. In some cases a SD card and separate software app may be required to achieve a connection. Please see our website for details <http://cypherlabs.com>

### Why should I keep my iPod firmware up to date?

Make sure that your iPod firmware is up to date. You can make sure that your iPod firmware is up to date when you sync your iPod with iTunes. Select "Check for Updates" in iTunes to make sure that you have the latest firmware.

### How do I reset my iPod if it locks up?

iPod – Toggle the Hold switch on and off (slide it to Hold, then turn it off again). Press and hold the Menu and Select buttons until the Apple logo appears, about 6 to 10 seconds. You may need to repeat this step. iPod touch – Press and hold the Sleep/Wake button and the Home button at the same time until you see the Apple logo.

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### Why can't I hear my music immediately when I dock my iPod?

When you dock your iPod, the Theorem 720 DAC first initiates a handshake with the iPod and the iPod verifies communication with the Theorem 720 DAC. Once the handshake has taken place, the Theorem 720 DAC has access to the audio stored on your Apple device and will stay synced until it is undocked. The communication usually takes just a second or two. You will note the charging symbol on the Apple Device indicates it is receiving power.

### What if the connection is not made after a few seconds?

When you dock your iPod, the Theorem 720 DAC® first initiates a handshake with the iPod. Sometimes the cable connection is not complete or an application error has occurred on the iPod. Try restarting the iPod and try the connection again.

### How should I clean my product?

Use a dry polishing cloth or a lint free cloth to wipe the exterior only. Be careful not to use water or get any liquid inside the product. Solvents will damage the finish, do not use them.

## The Theorem 720 DAC® is battery powered. Can I replace the battery?

Yes, the battery connection is designed so that customers with reasonable knowledge of electronics can replace the battery, although Cypher Labs will gladly replace the battery for a nominal fee. The battery should last for many charge cycles, but everything wears out over time. Contact your retailer to purchase the new battery and receive detailed instructions.

## How is the battery life of the iPod when using the Theorem 720 DAC?

As you know, batteries are ubiquitous and are long lasting these days, but power management is complex. Even Apple forums are filled with comments and questions about battery run times, life-span, etc. We all know that real world experience will vary from theoretical or laboratory data. At the end of this section, we've included some recommendations for getting the most out of your Apple and Cypher Labs batteries.

When beginning with a fully charged iPod or iPhone you should expect to get up to 18 hours of continuous play time, and at the end of the battery life your iPod or iPhone will still be fully charged. If you begin with a less than fully charged iPod or iPhone then play time will vary. The battery has a high capacity and recharges quickly. Apple Device model, OS version, temperature, altitude, age, type of file used, device settings, etc. all impact power usage.

Apple Device USB output processing requires more power since it does not allow the Apple Device to go into low power mode. This is overcome by providing a large capacity battery to charge the Apple Device while playing.

## Power switch indicators

On position (turn knob to the right):

Solid Blue = On  
 No LED = Battery depleted  
 Yellow LED = Battery low  
 Red LED = Battery very low  
 Aqua = Charging

Off position (turn knob all the way left)

No Light = Off  
 Solid Green = Charging  
 Purple = Charged

## These are settings you can adjust to minimize power consumption

- ➔ Turn off Wi-Fi
- ➔ Turn off 3G (Wi-Fi + 3G model)
- ➔ Use Airplane Mode (Wi-Fi + 3G model) in low- or no-coverage areas
- ➔ Minimize use of location services
- ➔ Turn off push notifications
- ➔ Fetch new data less frequently
- ➔ Turn off push mail
- ➔ Auto-check fewer email accounts
- ➔ Use Auto-brightness, or in iPod Classic models turn off backlighting
- ➔ Set EQ to off
- ➔ Set cover-flow to off
- ➔ Use the screen less frequently
- ➔ Manage the use of downloaded applications that prevent the screen from dimming
- ➔ Lock your Apple device when not in use
- ➔ Use Your Apple device regularly
- ➔ For proper reporting of the battery's state of charge for both Apple and Cypher Labs devices, go through at least one charge cycle per month
- ➔ Apple Lossless files should be used for longest battery life, since they are the fastest to decompress
- ➔ Turn off the Theorem 720 DAC when not in use

See [www.apple.com/batteries](http://www.apple.com/batteries) for more information.

## WARRANTY

CYPHER LABS, LLC warrants our products to be free of defects in materials and workmanship for a period of one (1) year from the date of purchase. Your warranty period will be measured from your date of purchase. You must provide proof of purchase in the form of a purchase receipt, invoice or other valid purchase document. We request that you contact us if you feel your product is not working properly. We can often solve product issues by phone or e-mail, saving you the time and expense of returning the unit. If we require you to return the product, contact us via email and we will issue a Return Authorization to expedite the handling of your warranty claim. We will repair or replace any defective product or part when notified within the warranty period, and will return the product via domestic ground shipping at no charge. The following issues do not result from a manufacturing defect and are not covered under this warranty:

- ➔ This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; misapplication; misuse or other operating conditions outside of CYPHER LABS's control
- ➔ Damage resulting from severe impact, crushing or mechanical harm
- ➔ Normal wear and tear
- ➔ Failed batteries
- ➔ Any action of the purchaser, including but not limited to mishandling, operation outside of design limits, improper repair, or unauthorized modification
- ➔ Components which wear are not warranted, including but not limited to contact points and fuses

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[www.cypherlabs.com](http://www.cypherlabs.com)

# Theorem

# 720 DAC

Headphone Amplifier



Made for



iPod



iPhone

24 / 192 DAC and  
USB Line in for  
Apple Devices

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"Made for iPod" and "Made for iPhone," mean that an electronic accessory has been designed to connect specifically to iPod or iPhone, respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod or iPhone may affect wireless performance.

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