

Questyle

Audio Engineering



M12 · Mobile Hi-Fi Headphone Amplifier with DAC

M12· Mobile Headphone Amplifier with DAC

To greet mobile lossless music in the 5G era, Questyle released the M12 in 2021, a mobile Hi-Fi headphone amplifier with DAC, which integrates Questyle's core technology and carries on the gene of mobile Hi-Fi feature. M12 allows all mobile phone users to break through limitations of technology, cost and size of the audio circuit integrated into mobile phones, and feel free to enjoy lossless music from streaming anytime in any place.

Now, let M12 take you to your mobile Hi-Fi journey!



Sound by Questyle



Independent SiP Current Mode Amplifier Module

Powerful Headphone Amp

The patented "Current Mode Amplification" technology is the fundamental difference between Questyle's hardware and other terminals. The amplifier is to a headphone system what the engine is to a car. As the "engine" amplifier, it has a crucial impact on the improvement of sound quality. Benefiting from our self-developed SiP Current Mode Amplifier module, M12 is free from the power limit of operational amplifier chips and provides a totally different sound performance with the ultra-low distortion level of 0.0003%. It has ultra-high current output power and excellent sound control. It will fully dig out the potentiality of your headphones.

Self-adjust to fit headphone impedance

8Ω-600Ω

Ultra-low distortion

0.0003%



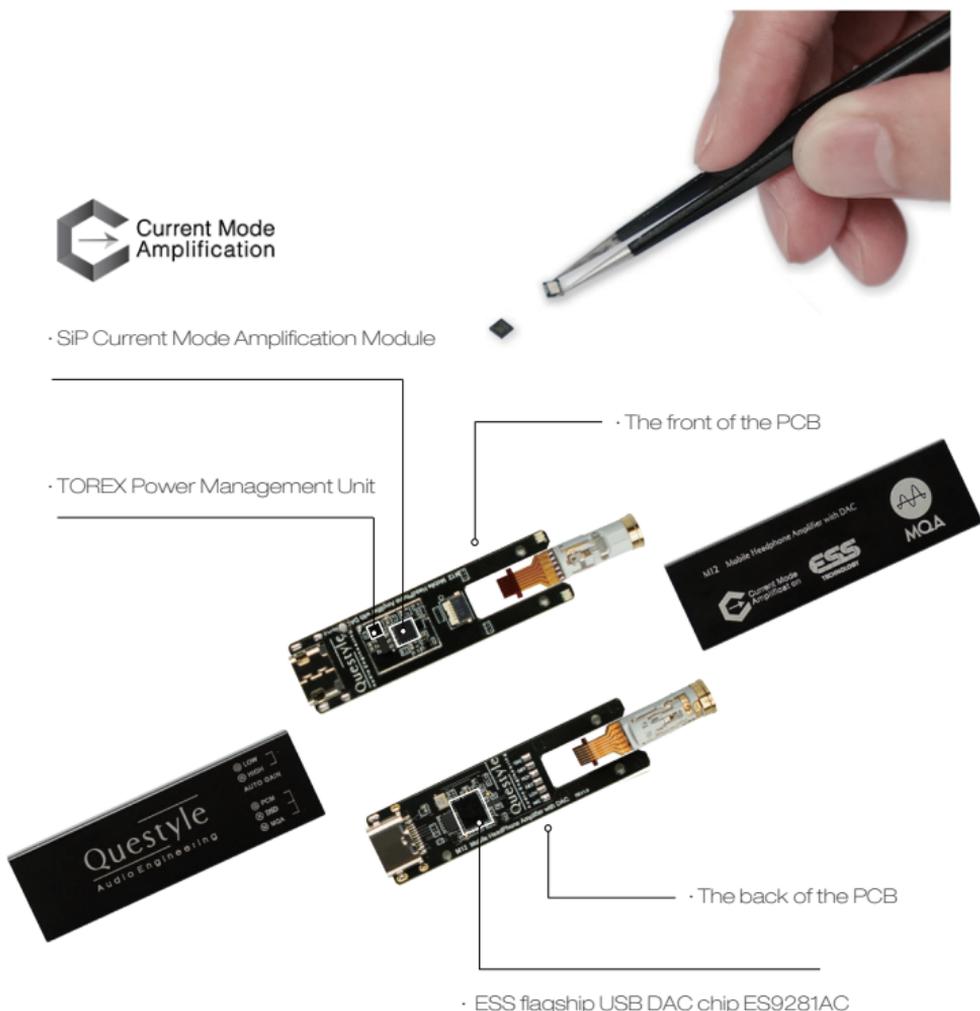
· SiP Current Mode Amplification Module

· TOREX Power Management Unit

· The front of the PCB

· The back of the PCB

· ESS flagship USB DAC chip ES9281AC



Smart Detection of Impedance

Automatically self-adjust to fit your headphones

When M12 is plugged into a headphone, the built-in smart detection system will start automatically to detect the headphone impedance and self-adjust to fit the headphone. Just like the auto shift of a car, M12 will self-adjust to high power level to drive high-impedance headphones with the Gain indicator showing red light, providing excellent dynamic performance. When driving low-impedance and high-sensitivity earphones, M12 will reduce the output level and accurately match their impedance, with the Gain indicator showing green light for low impedance.



AKG K3003(8Ω)



Sennheiser IE800(16Ω)



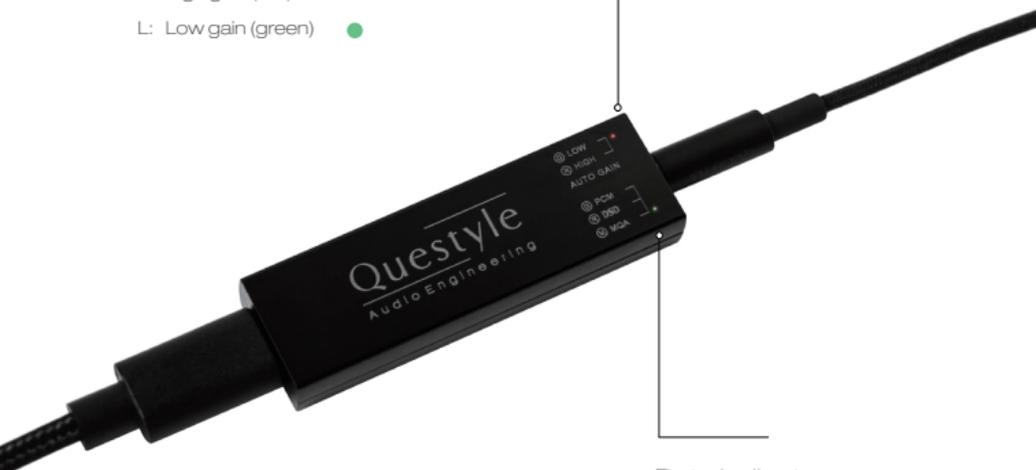
AKG K701(56Ω)



Sennheiser HD600(300Ω)

· Gain indicator

- H: High gain (red) ●
- L: Low gain (green) ●



· Data indicator

- PCM (green) ●
- DSD (red) ●
- MQA (magenta) ●

ESS Flagship USB DAC Chip

Lossless Hi-Fi Experience

Questyle and ESS team spent two years developing the mobile headphone amplifier with DAC and it will perform better than expected. The logo of both Questyle and ESS are put on M12 in order to mark the first cooperation between the two companies. ES9281AC, the ESS flagship USB DAC chip built in M12, has decoding capability up to PCM 384kHz/32bit and DSD256. Whether it is the deepest bass sound of the organ in European cathedrals or the strongest bass and guitar melodies in hard rock, M12 will always be able to capture the details buried deep in the soundtrack.



TECHNOLOGY
ANALOG REINVENTED

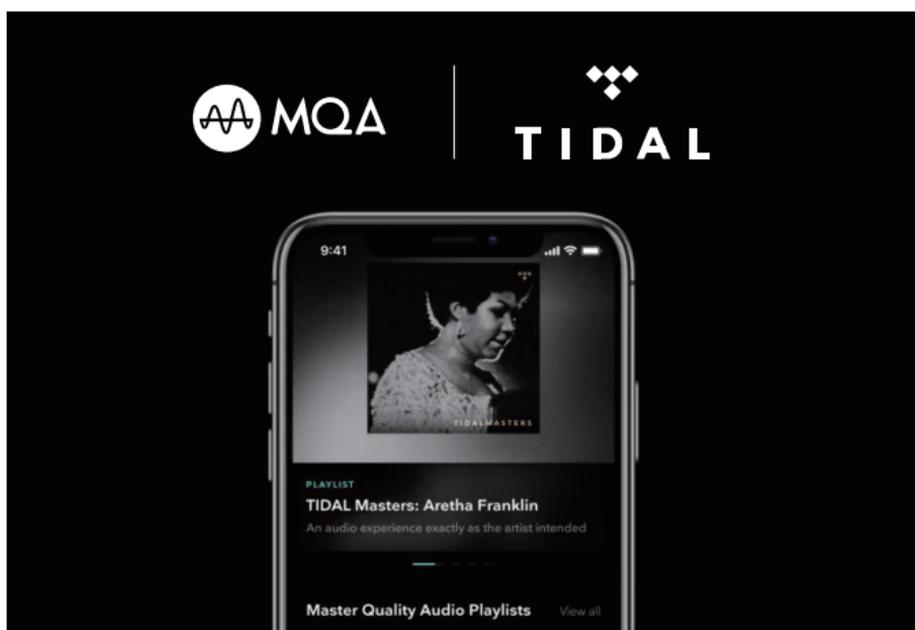


Support MQA Decoding

M12 supports MQA (Master Quality Authenticated). MQA decoding is a new format of digital coding, which can make audio streams of high sampling rate be packaged into files that are small enough to be suitable for streaming. MQA format carries 100% information of the original audio signals. It can fit your audio products in a very smart way and achieve a highest-quality playback of those signals. During this playback, the sound you hear has the same quality as the artists perform in the studio.

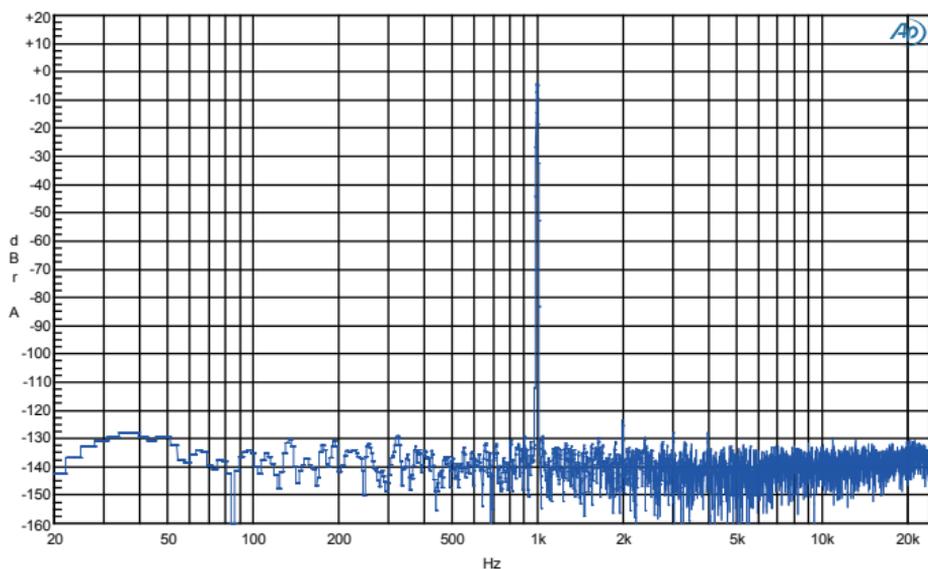


Bob Stuart, the co-founder of Meridian and inventor of MQA technology



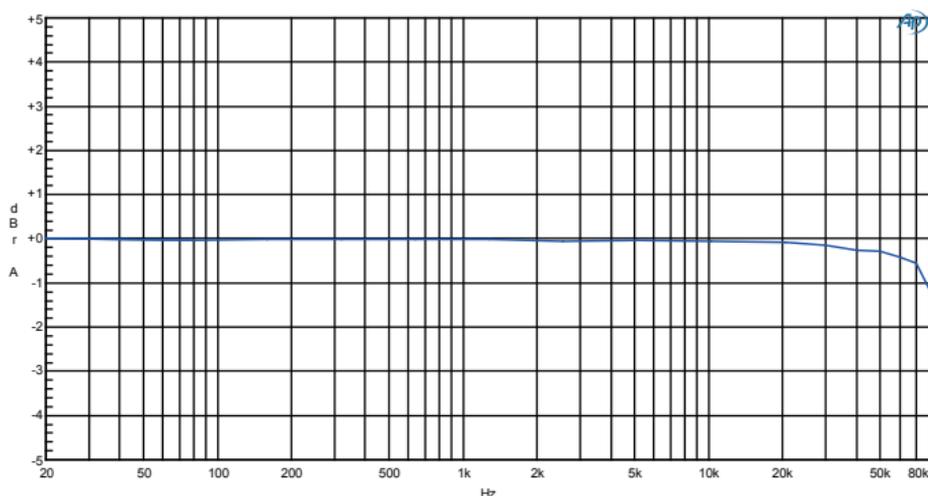
Excellent Audio Performance

FFT @1kHz sine wave $P_o=5mW$
Data from Audio Precision AP2722



Background noise of M12 is lower than -130dB

Frequency response curve: 0dBFS 192k/24Bit high sampling rate files
Data from Audio Precision AP2722



M12 achieves real Hi-Res with the ultra-wide frequency range more than 20kHz

Perfect Compatibility

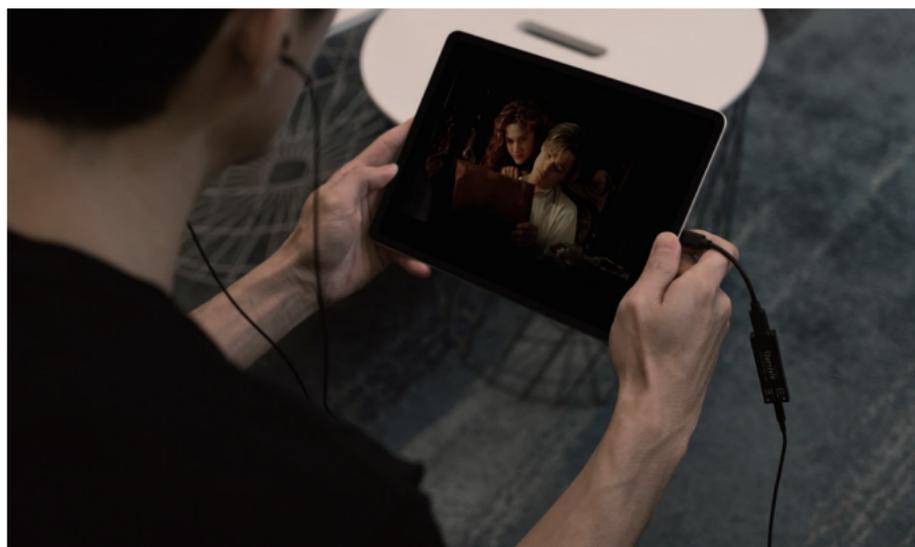
Plug and play, enjoy your Hi-Fi journey

M12 has optimized the USB compatibility of Type-C interface for mobile phones launched by HUAWEI, OPPO, vivo, MI and Samsung. It is fully compatible with Android 5.0 and above systems, as well as Win10, Mac OS and iPad Pro.



· Connect M12 to PC

Perfect Audio & Video Experience with Zero-Delay



· Connect M12 to iPad Pro

Classic Black , Stylish Silver

The body of M12 adopts anodized aluminum sandblasting process to create two typical colors of Questyle style: Classic Black and Stylish Silver, tasteful and professional.



Specifications

- Operating System Required:

Android phone and pad: Android 5.0 and above

PC: Win10 1803 and above

Apple cellphone: iOS (You need to buy an OTG cable for Lightning to Type-C.)

Apple computer: Mac OS

- DAC Capability of M12:

PCM: 32kHz - 384kHz (16/24/32Bit)

DSD: DSD64(1Bit 2.8MHz) , DSD128(1Bit 5.6MHz), DSD256(1Bit 11.2MHz)

- Output Power:

Built-in smart detection circuit will automatically self-adjust the output power to fit different impedance of headphones.

$RL=16\Omega$, $P_o=46.11mW$;

$RL=32\Omega$, $P_o=26.71mW$;

$RL=300\Omega$, $P_o=12.26mW$;

When the detected impedance is less than 70Ω , M12 will self-adjust to low gain output.

When it is more than 70Ω , M12 will self-adjust to high gain output.

When it is more than 600Ω , M12 will automatically switch to 2Vrms line out.

- Frequency Response: $\pm 0.1dB(20Hz-20kHz)$

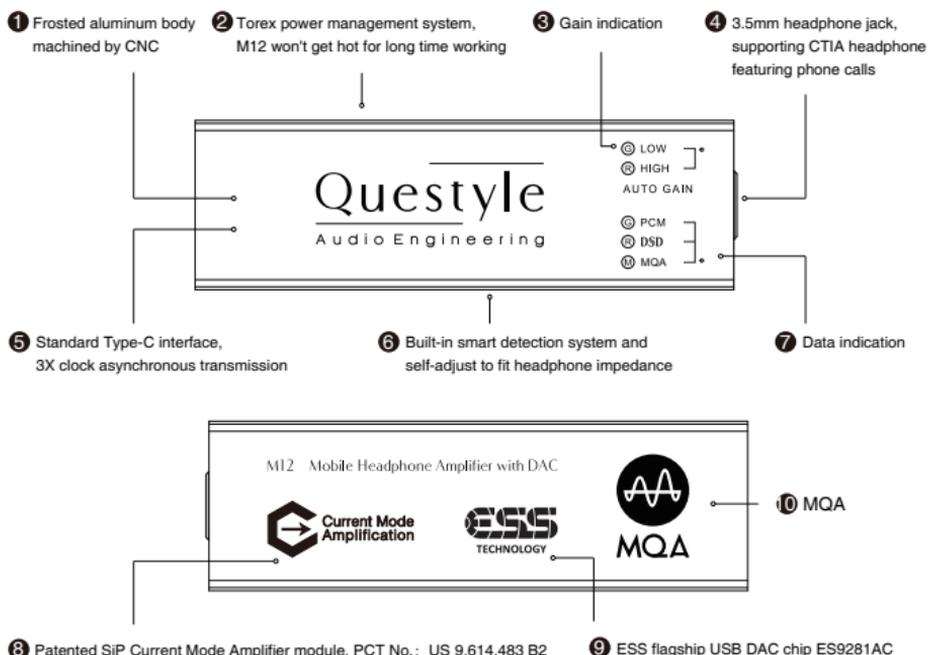
- THD+N: 0.0003%

- DAC: ESS flagship USB DAC chip ES9281AC

- Material: CNC machined aluminum

- Color: Black / Silver

- Size: 51[L] X 16.5[W] X 8.1[D] (mm)



In the Box



○ M12 Product Description x1



○ M12
Mobile Headphone Amplifier with DAC x1



○ Type-C to USB-A Cable x1

○ Type-C to Type-C Cable x1