

HiFi音響 review

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MILLER & KREISEL®
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X+系列
THX認證超低音

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深潛
攝人氣魄

**Breathtaking
Deep** Extensive
Bass!



Cover Story

Accurate and Clear, Deep Extensive Bass,
Touching Source of Power!

Subwoofer

M&K Sound

M&K X15⁺

China Distributor (Including Hong Kong & Macau) :
Miro Sound & Vision Ltd.

中國代理（包括香港和澳門）：
米樂影音有限公司

M&K Sound's first release of a 15-inch Push-Pull subwoofer was a breakthrough design. Unpacking a 61.1kg (134.7 pounds) subwoofer requires two strong man. The sound's power and bass definition make up a very enjoyable demonstration that can blow you away. With height being: 83.3cm, width: 51.5cm, depth: 46cm, it is very fitting for our 400 sq ft two channel listening room. However, we put it in our 160 sq ft multi-channel listening room instead, because we wanted to listen to its Dolby Atmos effect.

Janet



Ability to listen to 16Hz?

Theoretically, the length of the 100Hz soundwave is already more than 10ft. The 16Hz soundwave is 32ft. In reality, playing 16Hz requires the room's longest diagonal length to be long enough, along with a good Room Mode. Our multi-channel room is 10ft 6in in width, and 15ft 2in in depth, making it 160 sq ft. Also, it is 10ft 10in tall, with the left and right corners having a tube trap to control the bass. When playing the sine wave at 80Hz, then 64Hz, 50Hz, 40Hz, 32Hz, 20Hz, 16Hz, the bass to deep bass is performed clearly. I can feel the deep bass vibrating from the ground to my chair.

When listening to this X15+, I believe that it makes you want to listen to it for life, because it would not be easy to create another breakthrough like this. Your satisfaction of the X15+ when watching movies or listening to music would be on a whole new level. It is difficult to criticize it.

From X10+ to X12+ to X15+, I always put the subwoofer in the same position when listening. I once said that the X10+ made me elated. The X12+ has a rather firm bass, and the X15+ has a deeper extensive bass, amazing momentum, greater power, yet restrained. I would use Iguazu Falls to describe its superb performance.

1400watt Output Power

X15+ has a built-in digital switch mode power amplifier, with 700W RMS output power, 1400w peak output power, and 16-200Hz frequency response. The front baffle has a 15in long excursion woofer, as well as the bottom. This makes up the M&K Patent Push-Pull Dual Driver configuration. When the front baffle woofer push, the bottom woofer would pull down. In contrast, if the front baffle woofer would pull, the bottom woofer would push up. This Push-Pull Dual Driver configuration can correct imbalances of the cone and voice coil of driver movement.

New Design

X+ series uses brand new woofer cones, dust covers, long voice coil and Conex Spider suspension, magnet, aluminum driver frame with better cooling abilities, strengthened cabinet construction and bracing!





X15+ does not seem to have any big changes externally, but it has a lot of modifications internally. Its sound performance is also elevated. The Carbon Fiber Woofer Cones is a new design. It has a sandwich structure containing a bubble layer, which results in ultra-high strength, rigidity, and lightness. This causes the cone to have more power and excursion. The cone's suspension structure has an NBR polymer. It is not sensitive to temperature and has a good damping factor.

75mm Voice Coil

Behind the cone is an aluminum basket, which has an open design removing the compressed air. This new basket design may also better connect the driver unit and cabinet. X15+ has a 75mm aluminum voice coil. The coil's movement range is 54mm. The linear movement range is better than 20mm. We were able to listen and feel these improvements.

Structure and Circuit

The aluminum voice coil is placed on the Conex Spider. Conex is a type of cooling and fire-resistant fiber. The driver unit's new pole spacers and short circuit protection design can lower non-linear distortion and impedance, making the voice coil's movements faster and more accurate. This makes the X15+ able to match with other speakers easier. M&K does not use servo circuit design as it would delay the signal, causing distortion. Instead, it has a Headroom Maximizer, which demonstrates a gentler method to protect the circuit, preventing unnecessary dynamic peaks that may damage the driver unit. An accurate EQ filter is matched with a new driver and cabinet structure, increasing the subwoofer's



linear frequency response.

Is the enclosure sealed or not?

X+ has a sealed cabinet. Its strengths include giving the bass a fast transient response, clarity, a full lower range, and detail. X+ is considered to have a sealed design, but not entirely, as the lower driver unit is an unsealed enclosure, allowing us to see the magnet. The strength of this design allows for the elimination of harmonic and non-linear distortions, resulting in a more accurate lower range performance. This allows the amplifier to increase 6dB power output. The cabinet has a 25mm MDF.

X15+'s clarity matches the most with other channels out of the 3 X+ models. It's also the most suitable for enjoying deep bass in concert.

Sophistication

When playing the movie The Batman, Batman chased after the Penguin mid-film. X-15+ was able to make the gun-noises sound very strong, fast, exciting, yet not too harsh. The Batmobile sounds rich, deep, fast, and clear. This performance succeeds that of X12+. There was a scene when Catwoman attacked the gangsters with her motorcycle. I wasn't fully satisfied with the sound here prior, but while listening to it this time, the motorcycle engine sounded way stronger, increasing the enjoyment of the movie. On the road, there were multiple big storage trucks rushing past. While listening, I felt the immense power of these trucks when driving quickly on the side. When Penguin drove his car on the rocky, bumpy road, the X15+ displayed a more rich, dimensional, vibrating, and powerful bass compared to the X12+.

Sounding clean and rich are the most outstanding areas of the X15+. While playing Spider-Man: No Way Home, there was a scene where the characters were talking in the laboratory before a fight. The actors' vocal positioning was very clear and distinguishable. The male voice was not thin, and the midrange was very rich. When the fight started, the setting became very chaotic. Under circumstances where mid and high frequency were not blurred, the swift movements of the actors were very coherent and clear. When portraying The Lizard's high density and focus, The Sandman's gigantic demeanor, and Electro's fastness, power, and focus, the X15+ demonstrated a very detailed bass, creating a different sound for every character. While Dr. Strange was repairing the sky, there was an incredibly strong, deep bass surrounding sound. This cannot be created without the X15+. X15+ is one of the best out of all the subwoofers I've listened to.

In the beginning of Blade Runner 2049, the spectacular sound stage, powerful deep bass, and the momentum of the flying spaceship are way more outstandingly portrayed by the X15+ compared to other X+ models. While 2 men were fighting in chapter 1, their fists sounded incredibly strong. When the gun blasted, my heart shook and I felt scared. When the strong man fell, the bass was very loud and dimensional. It's hard to imagine me watching or enjoying this film again after the X15+ has gone. In chapter 7, the dam's water rushing down was very powerful. As the kite was pulled from the back while opening, its sound was the best out of all the other times I've listened to it.

While playing No Time to Die, the subwoofer sounded very clean, and the pre-amp & power amp was outstanding, allowing me to clearly listen to the graveyard blowing up.

This explosive effect amplified the movie's enjoyment. When James Bond's car was shot at the plaza, the mood was so intense, that I also felt scared as if my own car windows were being shot. When the 2 machine guns of 007's car were shooting at 360 degrees, the guns sounded extremely fast and speedy. The sound effects of these guns were entirely different compared to the guns from before, as these guns were faster with a deeper bass, increasing the excitement of this scene.

Concerts Sound Amazing

It is hard to expect for AV loudspeakers to perform well while listening to music. However, I was able to use this AV system to play 《afq in concert》BD well, as it had a lot of musicality and detail. X15+ evidently improves the main channels performance, allowing it to play music better, after knowing that the main channels clearly has room for improvement.

I used to listen to 《Hans Zimmer Live in Prague》

BD before. However, I would stop after playing it for a while. When I listened to it this time, I found that this BD recording actually isn't too bad; it proved that AV systems usually have difficulty in playing it nicely. I hear a spectacular sound stage while playing Crimson Tide, along with touching music and movie-like excitement. Although the bass is deep and heavy, it does not affect the artists and instruments. In this listening room, X15+ seemed to only have used 30% of its power to display the quality of X12+, and only 10% to display that of X10+!

I haven't had a lot of experiences where a subwoofer could play music well or easily integrate into the music. X15+ is definitely the most worth buying out of the other dual 15in driver units.

