



# Acoustic Signature

## Montana

### Looks Better, Priced Better

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Apart from excellent performance, the German-made Acoustic Signature turntable is renowned for its precise craftsmanship and heavy construction. The million-dollar (Hong Kong) Invictus weighs 143kg alone, and 311kg when mounted on its dedicated stand. Now Invictus has transplanted the know-hows from the flagship to Montana, which results in much lower price than Invictus and also cheaper than Invictus Jr, while performance is close to the flagship model. It is absolutely charming with its Hi-Tech build and stylish look. After listening to it, I find Montana, which was first launched in last year's Hong Kong High End Audio Visual Show, more irresistible.

### Weight reduced, but not quality

Through simplified construction to lower the cost, Montana is lighter than Invictus by over 100kg, yet the anti-vibration ability by the all aluminium body with inserted brass Silencers is comparable to the higher model. Unless you prefer super-heavy construction, otherwise, the lighter and

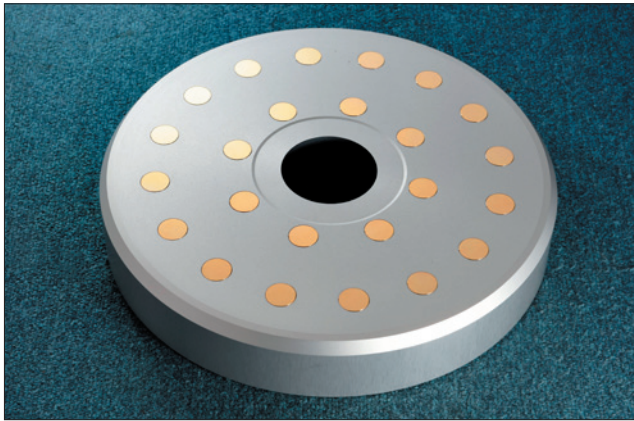
streamline body of Montana may be more attractive. Apart from a more appealing look, the price of Montana is not so inaccessible. In order to retain as many strong points of Invictus as possible, although Montana is not as rock stable as Invictus, its all aluminium construction still weighs 41kg, and its performance is also very extraordinary. The reason comes from different respects, not just as simple as it looks.



Specifications:

■ Speed: 33-1/3 and 45 rpm ■ Turntable Dimensions: 426 × 160 × 426mm ■ Weight: 41kg





## Comparable to Flagship Model

To ensure the anti-vibration ability after reducing weight, the Silencers which are used on Invictus also apply on Montana. The Silencer originates from Ascona, its unique design helps absorb vibrations, minimizing the influence of unnecessary resonances on the cartridge when picking up signals. Inserting Silencers is not an easy job, these solid brass bars must be manually hammered into the platter one by one. According to information from Acoustic Signature, if only 8 Silencers are fitted into a 50mm aluminium platter, all ringing from 2.2kHz to 15kHz will be eliminated. In Montana, the number of Silencers is 8, the anti-vibration power is of course much enhanced. Compared with Invictus which has 30 more Silencers near the edge of the platter, Montana has much less. But since both have the Silencers spread over the platter evenly in concentric circles, they are applying the same anti-vibration principle, and both can eliminate resonance by over 80dB.

## Absorbing Vibrations through Silencers

The Silencers look as if they are firmly attached to the aluminium platter, but actually, before inserting a brass Silencer into the platter, two rubber rings are fixed at the two ends first, so that there is a gap of less than 0.01mm between the two metals. It is indeed very delicate craftsmanship and that allows the Silencers to be firmly fixed in the 50mm Montana platter to perform their functions, i.e., absorbing and reducing vibrations.

The aim of all these complicated job procedures is to solve the problem of vibrations caused by unavoidable resonance at a certain frequency range by a single metal. The brass has a good anti-vibration property. When it is fitted into the aluminium platter, it helps creating a high damping effect, together with Montana's CLD (Constraint Layer Damping) technology, resonance is much reduced so that Montana is free from constructional mechanical noise. The soft mat on the platter can further strengthen the anti-vibration effect, even the air vibrations reflected from the listening venue are effectively eliminated.

## Robust and sturdy Tidorfolon Bearing

Acoustic Signature turntables are well-known for their heavy weights, but they don't apply air or magnetic floating because Gunther Frohnhof believes solid bearing support is best. However, to support the heavy



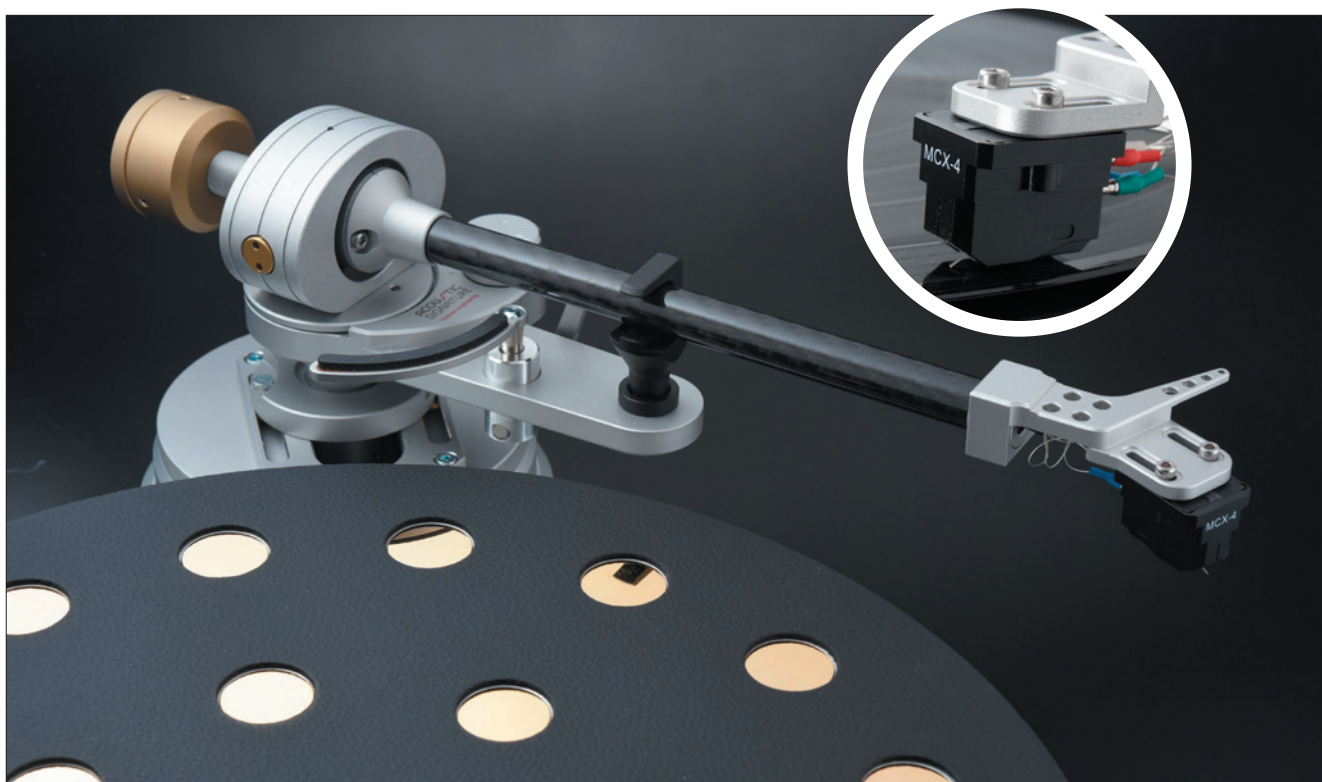
*In the Hong Kong High End Audio Visual Show 2019, Gunther Frohnhof, President of Acoustic Signature, focused on the precision structure of Invictus, while the Sales Director, Robert Hagemann (above) showed Hong Kong audiophiles with the debut of Montana.*

metallic platter with a single pivot bearing is no easy job. Gunther Frohnhof developed an alloy, Tidorfolon, which combines titanium, vanadium, ferrite and Teflon to solve the problem. Tidorfolon is not pure metallic, it has the property of self-lubrication which means no extra lubrication is needed for long-term use. Moreover, it has strong resistance against wear and tear, so that the platter can turn freely under a friction-free, noiseless bearing.

The Tidorfolon bearing works perfectly on the super-heavy Invictus, and it only works more effectively on the 14kg Montana. To ensure a strong and the right control in the main shaft, the bearing driving system in Montana is composed of 3 sets of motors, and the main shaft of the sub-platter is driven in all domains through 3 belts in a unique way. This balanced driving force increases the stability of the whole system. Montana also adopts the advance DMC2+ digital DSP speed-control system to monitor the speed of Montana, ensuring the 3 sets of motors are in uniform speed. This separate power supply and speed-control unit use the same red and blue RJ45 plugs as its upper model, to connect the with main unit, which also helps keeping the accuracy of Montana.

### Three-point support provided stable structure

It is easily to have the impression that the four cylindrical pillars stretching out from Montana are the stands; only the two in front are. The third is hidden beneath the bottom of the turntable. Through the 3 sharp pikes, Acoustic Signature provides strong and stable support to Montana, and by turning these pikes, precise horizontal position can be adjusted. As to the other two cylindrical pillars, they are used to install two arms of own choice. Since the position of the arm base can be altered, it is possible and simple to install any arms between 9-12 inches to Montana.





We used the original Acoustic Signature TA 7000 tone arm and the MCX-4 cartridge, that made everything direct and simple. After all the necessary adjusting, I played the LP “White Snow in early Spring”, pipa solo by Wong Ching, String Ensemble of Shanghai Symphony Orchestra conducted by Jiang xiao-peng. The delicate and smooth reproduction from Montana highlighted the perfect rhythmic control of Wong Ching. The strong bass brought out the strength of the bass drum towards the end, strong and full of power; it also vividly expressed the scenery of the Spring returning. Apart from a very lifelike 3-dimensional sound field, the sound was detailed, showing all the various technique of Wong Ching’s right hand, with the skillful glissandos and harmonics from her left hand, the effect was impeccable!



was very exhilarating, the master tape being processed by John Webber of Air Studios London. Under the precision turning and signal picking up by Acoustic Signature, the famous hot and high speed “Juan Loco” on Side A kept its distinctive layers, the two guitars by the Mexican duo did not get into a mess, even though they were ‘fighting’ in an ultra-sonic speed! Audiophiles who had listened to this red LP should know this was not easy. Any slight fault in manufacturing, processing, or not so perfect in adjusting would cause the high-speed playing collapse and ambiguous, the positions of the two guitarists would get out of place or overlapping. That’s why the performance of a turntable would turn bad with the slightest error. This would not happen with the Montana combination, the guitars kept crystal clear, the guitarists on left and right could also clearly show their personal playing characteristics. Turning to “Ixtapa” on Side B. With the applause from the audience, the sound was carefully sculpted and full of details. As music



## Distinctive in layers and rich in details

The double LP (Live in Japan) by Rodrigo y Gabriela

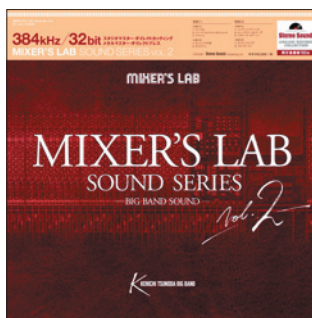






proceeded, Gabriela on the left began to add strength. Deep bass came surging through Acoustic Signature, and Montana's strong and powerful expression gave this piece, which was ever changing in speed and playing technique, an incisive and smooth reproduction.

When changed to Mixer's Lab Sound Series Vol.2, "Caravan" from Side 2 was equally fantastic. The trombone by Hideaki Nakaji was flawless, together with the refined trumpet by Yoshio Miyamoto had built up a lively 3D sound field, the melody was very captivating. This piece had been rearranged, creating a magical style and charm just like travelling in space. This was quite different from most other vibrant and exciting interpretations.



The two brass players' amazing performance had brought out a completely different style and feeling. When reproduced by Montana, the perfect brass sound was strong, yet not piercing to the ear. The accurate analogue signals picked up by the Acoustic Signature not only showed the true texture and charm of the instrument, but also added a unique and elegant mystery to this 1936 piece composed by Duke Ellington!



## Summing Up

Acoustic Signature was founded in 1996 in Sussen, south-west of Germany, near Stuttgart. Staff numbered less than 30, each and every one was elite from different fields in the industry. Gunther Frohnhof, the founder, had an unflinching passion towards super vinyl turntables. Some time ago, regardless of very high prices, he bought in CNC machines which can help producing accurate metallic spare parts. After years of hard work, combining with powerful CAD/CAM system in data processing and carefully selected and developed materials, Acoustic Signature has finally won the recognition of audiophiles worldwide with one after another top-level products from the finest German craftsmanship.

The principle behind the newly launched Montana is still based on the LP turntable which has a history of over 100 years, yet it outstands in precision craftsmanship. To ensure high qualities, each critical part is developed and manufactured in their own factory in Germany. Through thorough use of advanced computer technology in the rigorous production procedures, Montana looks Hi-Tech and fashionable, combining with flawless meticulous mechanical structure, its high standard is comparable to the flagship model! 音