

Activate Your Bass!



The Prima range of OEM integration products from Audison is already seen by some installers as the saviour of car audio upgrades. The range continues to expand as new and exciting products, such as this blinding active bass box are developed and launched.

Subwoofers, oh no I hear you cry! Huge, noisy, flabby bottom-end producers that consume vast amounts of electrical power to make unmusical sounds? This certainly used to be the case and unfortunately some of these products still exist, however, there is a new breed of super-efficient, compact subwoofers available, led in many ways by the Prima revolution. The sophisticated audiophile is beginning to appreciate that bass extension in a car is extremely important. Many car manufacturer's efforts produce unmusical bass tones at around 50-60Hz. In a lot of cases, this is boosted at low volume then the bass is reduced at motorway listening levels in order to protect inadequate standard speakers supplied in the vehicle. Furthermore, as the bass is so focussed around a narrow frequency band, bass notes may be produced at very different levels. This is easy to check. Select a track with a simple low bass line – electronic music is ideal for this. We like to use "The Wheel" by Sohn. With this track each of the three notes in the bass line should be reproduced at the same level in order to be considered a faithful reproduction of how the track was recorded. If any sound louder or quieter, your bass is not performing as it should! When you get it right, bass enhances the music and does not swamp or override other frequencies in anyway. If this is not the case then the balance across the full audio spectrum is distorted giving music "colour" that was not intended by the artist.

Poor bass reinforcement may well impress when listening in the car showroom but will generally show its true flaws once the car is driven a few miles. On long journeys the bass can become very fatiguing. Many drivers forsake music in favour of talk radio stations which is a huge shame! Prima passive subwoofers have been wowing purchasers by providing seamlessly integrated, musical sub bass to systems with relatively low power requirement, but the new APBX 10 AS.2 raises the bar yet again. The neat and beautifully finished box seems to disappear into the luggage compartment of a car and is small enough to be located elsewhere in some circumstances. What makes this product exceptional however, is what happens inside. Before we go there, the only slightly irritating thing about the Prima package is the amount of pointless acronyms used to describe some of its features (He-li, 2s2, SSP etc.). We will leave these well alone for this article in favour of proper written descriptions that folk will hopefully understand. As previously mentioned, the key problem with most sub bass is the sheer amount of electrical energy required to produce it. However, the Prima solution allows large amounts of air to be moved with a relatively low power requirement. This is due mainly to the matching of ultra-low impedance voice coils with an equally low electrical impedance amplifier. The amplifier module in the APBX 10 AS.2 is specific to this product and runs 400 watts continuous perfectly happily

into a load of 0.16 ohms. Yes, you hear right! Not 4 ohms or 2 ohms but 0.16! It has long been known that Class D amplifiers can run at theoretically low levels but up to now there has been little point doing so, as there were no subwoofers around with this kind of impedance figure until now. For those less aware of the technical; impedance is a dynamic load on an electrical circuit. It gets in the way and stops electrical current flowing causing system inefficiency. However, by matching like for like, a resultant amplifier/speaker combination can be matched to be as efficient as possible. If you match a high impedance output



Amp setup and adjustment



Quick release power connector

“a new breed of super-efficient, compact subwoofers”

to a low impedance load however, lots of heat will be produced and doing this can cause a good deal of damage in your amplifier. Lowering the impedance of both amplifier and speaker enables a circuit to be more energy efficient. In this case, more output level (volume) will be achieved from less electrical current. The Audison Prima APBX 10 AS.2 has been developed to exploit this to the max! In order to create a compact box, a good deal of work has gone into the cooling of the voice coil. Traditionally, this is achieved by venting the heat through one or more holes in the base plate of the speaker. In order for this kind of venting to work however, some space is required between the rear of the speaker and the back wall of the cabinet. Audison has developed a method of venting heat through holes in the basket underneath the spider. This means that the speaker can sit flush with the rear wall of the cabinet allowing it to be much slimmer. An additional physical feature has been built into the sealed enclosure. It can be mounted with the speaker cone toward the floor or wall or facing away from it. The physical proximity of a floor or wall can increase the low-end

extension, however, this will affect the cut off at the other end of the bass spectrum as well as the dynamic response. Similarly, mounting the APBX with the speaker upward facing improves punch and dynamic response. Having tried this, it does make quite a discernible difference. Velcro standoffs are provided if you decide to mount your box on the floor firing downwards. A stitched Audison logo appears on both sides of the box for those to whom that makes a difference. If you really are stuck for luggage space, you might want a subwoofer solution that can be removed from time-to-time. This is made possible by a neat plug-in power connector. This renders the wiring safe if the subwoofer should have to be removed for any reason. Returning to the amplifier module, this features a 12dB/octave Butterworth low-pass filter. Featuring adjustable cutoff frequency between 50 and 300Hz, the filter can be bypassed when a bit amplifier or other external processor is used. There is also a 6dB bass boost adjustment that operates around the 45Hz area for emphasizing low sub bass if required. A gain control is also provided for set up and a wired remote level control is included so drivers can adjust the level as they drive to compensate for road noise cancellation. Automatic remote turn-on is a standard feature these days and allows the amplifier module to automatically power up when a signal is detected at either high- or low-level input. Input monitoring also allows the module to catch and adjust high level bass transients. A predetermined curve rounds off any of these that would cause unpleasant clipping, maintaining a real and distortion free reproduction even at high levels. A 180° phase switch completes the array of controls provided.

At the time of writing the Audison Prima APBX 10 AS.2 is priced at £499.99. For comparisons sake, the physically very similar passive box, APBX 10 DS is priced at £329.99 and the matching AP 1D mono block amplifier is £319.99. On this comparison it is easy to see that the active equivalent offers superb value for money. .□



Heat venting holes