

Axton ATB20A: Active subwoofer with passive cone

Compact Active Subwoofer



Modern amplifier construction: there are no „real“ heat sinks any more

► **Active subwoofers are practical and therefore highly sought after, allowing straightforward integration of bass into the vehicle. Axton now brings out its long runner in a new version as the ATB20A.**

Our Axton ATB has already been on the market for years and it is one of the best made compact subwoofer that there is. The aim was to build a subwoofer that covers all the important bass frequencies but is as small as possible. Such subwoofers are highly sought after, so it is no wonder that the Axton is no longer alone in the market. It is therefore time to treat it to a little upgrade. The concept has not been altered because it has proved itself. With a chassis size of 20 centimeters or 8 inches the ATB is positioned at the lower limit of what you would describe as a real subwoofer (exceptions prove the rule). And the „trick“ is also always the same: using a passive radiator achieves the frequency response of a bass reflex subwoofer



The woofer is a solid partner with metal basket and 38 millimeter voice coil

extended down to low frequencies, though with less enclosure volume. The frequency response of such subwoofers is therefore less of a problem; what you have to consider, however, is the maximum achievable bass level that is inherent with a small cone of just 17 centimeters. For this reason Axton also employs decent material in the ATB20A and therefore does not position itself in the cheap class. That begins with the enclosure, which is made completely from MDF. The durable plastic coating makes it sufficiently rugged for many years of service in a trunk. The stable horizontal hoop guards that protect the delicate cone

from damage also help in this respect. Externally, it is not possible to tell that the 20 cm speaker is powered from the passive cone; only after unscrewing the ATB is the heavy ferrite driver revealed. As is standard, this works with a 38 mm voice coil that can handle quite some power. The cone is of coated paper and the basket is a standard model of sheet steel. The power is produced by a fairly new power amp that is also employed in other active subwoofers from Axton. Although we have a conventional class AB power amp here, the way the device works is very





The slim enclosure is hard-wearing thanks to the plastic surface

Everything side by side: Molex input connectors, remote control socket and controls for low-pass filter, boost, gain and phase



modern with an amplifier chip, which makes it really tiny. The configuration leaves nothing to be desired; the ATB20A has everything you need. Beside the low-pass filter there is also a sensibly designed bass boost and a polarity reversal switch. Remote control, auto turn-on and start-stop capability are standard.

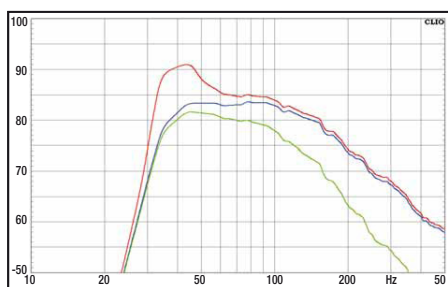
Measurements and Sound

On the test bench the power amp reveals a further feature, a subsonic filter with a fixed setting that steeply cuts off frequencies under 35 Hz. That is especially important in the case of a passive cone subwoofer, as otherwise the passive cone tends to uncontrolled excursions below its tuning frequency. The power amp delivers just under 100 watts with which the small woofer will also be happy. The acoustic behavior of the ATB20A is exemplary. It delivers a perfect amplitude response, at full level from 40 Hz and above. That is absolutely top class for a woofer having a volume of only 13.5 liters. In the listening test the ATB20A shows that it can also handle deeper bass tones. Up to moderate speaker levels it plays cleanly down into the frequency base-ment, and below the bass drum is by no means the end. Naturally it also has

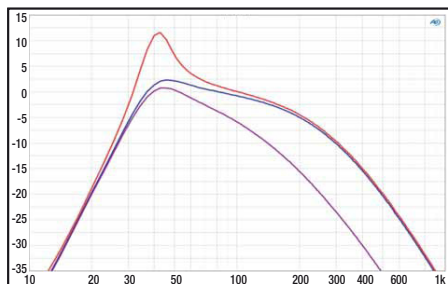
no problems with mid-bass frequencies, and reproduces fast beats at the top end with spirit. Overall, it plays very precisely and crisply, even though compromises have to be made here and there. A tiny passive cone 20 cm speaker is not exactly a fully-fledged all-rounder. However, the Axton user would never want to swap it: the small footprint and the good sound speak for themselves.

Summary

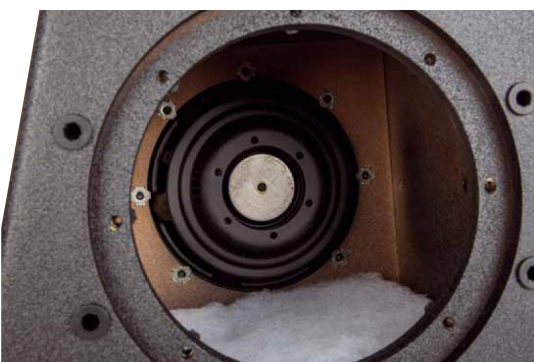
With the ATB20A Axton is relaxed about going into the next round of competing compact 20 cm active subwoofers. This low volume bass package is better than ever.



The acoustic frequency response shows how successful the tuning of the ATB20A is. With a lower cut-off frequency of just under 40 Hz the concept is fully exploited



The electrical frequency response of the power amp shows the bass boost with high Q at around 45 Hz. Directly below the steep slope of the subsonic filter kicks in



Opposite the driver is the passive radiator in the solid MDF enclosure

Axton ATB20A

Price	about 250 Euro
Distributor	ACR, CH-5330 Zurzach
Hotline	info@acr.eu
Internet	www.axton.de

Summary

▶ Sound quality	30 %	1,3	■■■■■
Bass foundation	7,5 %	1,5	■■■■■
Pressure	7,5 %	1,5	■■■■■
Accuracy	7,5 %	1,0	■■■■■
Dynamics	7,5 %	1,0	■■■■■
▶ Lab	40 %	1,4	■■■■■
Frequency response	10 %	1,0	■■■■■
max. volume	10 %	1,5	■■■■■
Amp power	20 %	1,5	■■■■■
▶ Practice	30 %	1,2	■■■■■
Features	10 %	1,0	■■■■■
Workmanship electr.	10 %	1,5	■■■■■
Workmanship mech.	10 %	1,0	■■■■■

Technical Data

Width	26,0 cm
Height	27,5 cm
Depth	25.5/32.5 cm
Volume	BR 13,5 l
BR port (d x l)	-
Weight	7,4 kg
Chassis diameter	20 cm
Nominal impedance	4 ohms
Coil diameter	38 mm
Power @ nominal impedance	94 W
Sensitivity max mV	120 mV
Sensitivity min V	2.0 V
THD+N (<22 kHz) 5 W	0.07 %
THD+N (<22 kHz) half load	0.18 %
Signal/Noise Ratio dB(A)	72 dB

Features

Lowpass	70 - 150 Hz
Bass-boost	0-12 dB/45 Hz
Subsonicfilter	30 Hz/24 dB, fixed
Phaseshift	pole switching 180°
Low-Level inputs	•
High-Level inputs	•
Autosense	•, DC
Start/Stop compatible	• (6,7 V)
Remote	•, Gain
Other	-

Axton ATB20A

Upper-Class 1,3

CAR & HiFi 5/22

Price/performance: very good

"Perfect all-rounder with small footprint."