

AXTON

AXTON A542DSP A592DSP • TEST REPORT CAR&HIFI 1/2022

Axton A542DSP + A592DSP: Four-channel power amps with DSP and Bluetooth streaming

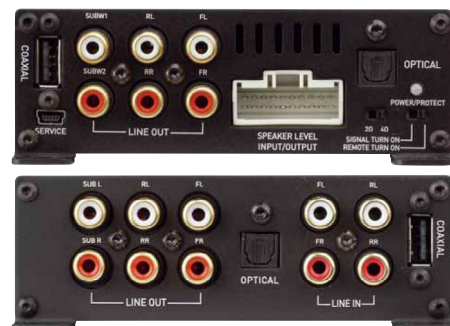
Plug&play-power amps



► With just a single aftermarket device give the factory system sound a helping hand? Install the whole thing per plug & play including audio streaming from a smartphone? The Axton A542DSP and A592DSP can do that.

It is already three years since Axton introduced its small plug & play power amp series. The aim was to give a sound upgrade to a normal factory system with car radio and door speakers in the simplest and cheapest way possible. With the A542DSP and the A592DSP we now have the latest models available, which have been improved in some respects. The configuration has become digital, with both amplifiers having been given two digital inputs as additional sources – very nice. First there is an optical Toslink input, then we find a 'coaxial' input, which conceals an electrical digital

input in USB format. The latter takes as its source the optionally available ABT50, with which streaming in Hi-Res quality is possible (see box). As before the strongest buying argument is the Bluetooth input for music streaming already available in the basic configuration, which switches on automatically when a song is started on the music player. The A542DSP and A592DSP are optimized for working with factory radios. Wiring harnesses fitted with ISO connectors are included for easy connection to the vehicle wiring harness. There is no need to do anything more to provide the original



Two digital inputs, optical and electrical, are available. Only the A542DSP has RCA inputs.

speakers with more sound via the vehicle wiring. The little A542DSP manages with the power supply from the ISO connector, whereas the more powerful A592DSP requires additional plus and minus leads from the car battery. Beside the wiring harness and the digital inputs, only the A542DSP has analog low level inputs: these are absent from the A592DSP for reasons known only to Axton. Both units have 6 RCA socket outputs distributed at the front and rear, and a dual mono subwoofer output. These 5 channels are naturally controlled by the DSP so that a complete Hi-fi system can be supplied with a signal. Thus for example in a first step, you can control a small active subwoofer. And, should a desire for more power arise, a four channel power amp can be added so that, for example, the A542DSP just acts as a sound processor with source input. If on a low budget, you can therefore upgrade your vehicle sound stepwise, from a booster for the original speakers to the active front system with subwoofer. Even in the basic

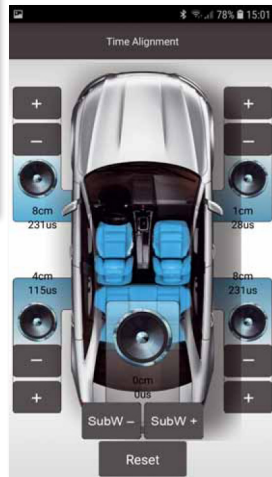


Bluetooth is present on both Axton units: the more powerful A592DSP has power terminals, for the A542DSP ISO connectors suffice





The main menu offers equalization, time alignment, gain and phase, as well as active crossovers. The noise gate and the bass-expander are incorporated in the gain and EQ



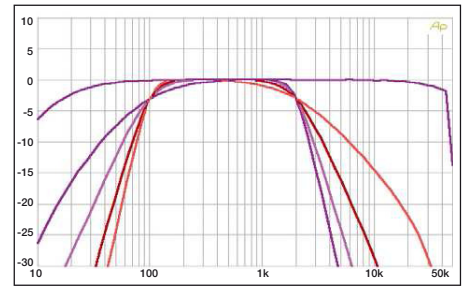
Conditioning of the time alignment of the 5 channels is superb. Large +/- buttons make it quick to enter settings

configuration the sound benefits from the integrated sound processor. True that offers not so many features as the fully-fledged DSPs on the market, but those cost more than our Axton units, and the Axtons have amplifiers built in. However, for good sound we think you have everything you need. There is time alignment, up to 31 EQ bands per channel, and freely configurable crossovers at slopes of up to 24 dB/octave, which in total is perfectly ok for a start. Looking inside the enclosure it is

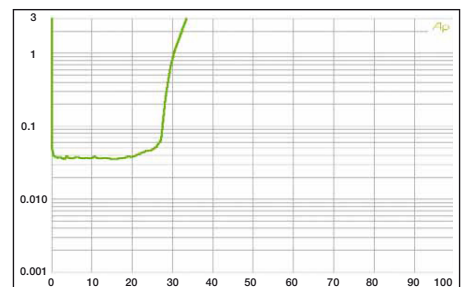
evident that these Axton units are right up-to-date. Improvements compared with the predecessor models are centered around Bluetooth, though the amplification has also been updated. A new digital circuit board is to be found in both models. On it we see the new Bluetooth receiver and the receiver chip for the digital inputs. A small AKM chip acts as the DSP. This already has 4 ADCs and 4 DACs onboard, and is supported by a two-channel DAC for the required fifth processed output. The amplification for the two models looks different. The substantially cheaper A542DSP has no power supply unit, and uses an analog four-channel chip for the amplification. The large A592DSP has had much more effort put into it. A small transformer power supply unit provides for an increased rail voltage and Class D amplification for more power.

Measurements and Sound

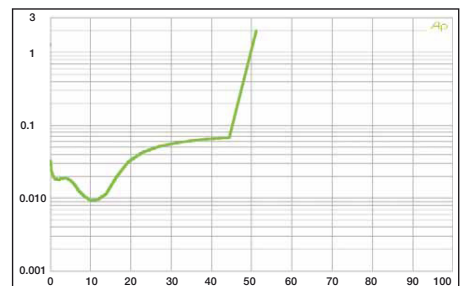
Another difference is that the A592DSP is 2-ohm stable, which must be set by a switch on the enclosure. In the case of the low-priced A542DSP one ought to anyway be content with the driver of the factory speakers, for which a good 30 watts per channel is adequate. By



With a 96 kHz sampling rate the audio frequency response extends above 40 kHz; the crossovers can be tuned from 6 to 24 dB/octave



The A542DSP delivers 30 watts at 4 ohms, enough for a small boost for the original speakers



The A592DSP shows its power, whether at 4 ohms or 2 ohms. We measured 47 watts with low distortion

Hi-Res Music Streaming



With the ABT50 Axton presents a streaming interface as an optional enhancement for the A542DSP and A592DSP that is specialized in the transfer of high resolution music files.

Those wishing to play Hi-Res music files or who have subscribed to a streaming service offering Studio Master quality can use the ABT50 to stream high resolution music. This requires the ABT50 to be docked to the A542DSP or A592DSP via the „coaxial“ input where it is selectable as a digital source and automatically switches on in the presence of a signal input. In this way both amplifiers can be upgraded from Standard Bluetooth to Hi-Res Bluetooth. This is state of the art with Specification Version 5.0 and compatibility with aptX HD, which transfers files with a 24 bit dynamic range, that is better than CD quality. The ABT50 has one USB input Type B (USB devices) to which a smartphone can be connected via OTG cable. This connection also enables Hi-Res transfer, in even better quality than wireless Bluetooth. A welcome additional feature is the pres-

ence of a digital output in the form of an optical S/PDIF. Although not needed for A542DSP and A592DSP, it allows the ABT50 to be universally used for other DSPs or power amps with an optical input. The „coaxial“ connection to the A542DSP and A592DSP is nothing more than a USB Type A connector that also provides the power supply for the ABT50. The power supply also functions with a normal USB socket, which is present in many vehicles, or can be easily provided with a small DC-DC converter at 5 volts in the car. The optical output of the ABT50 allows any device with an optical input to be controlled with Hi-Res music.



Axton ATB50

Price
Distributor
Internet

about 150 Euro
ACR, CH-5330 Zurzach
www.axton.de

Technical Data

Inputs

- 1 x digital Bluetooth audio-streaming
- 1 x digital USB

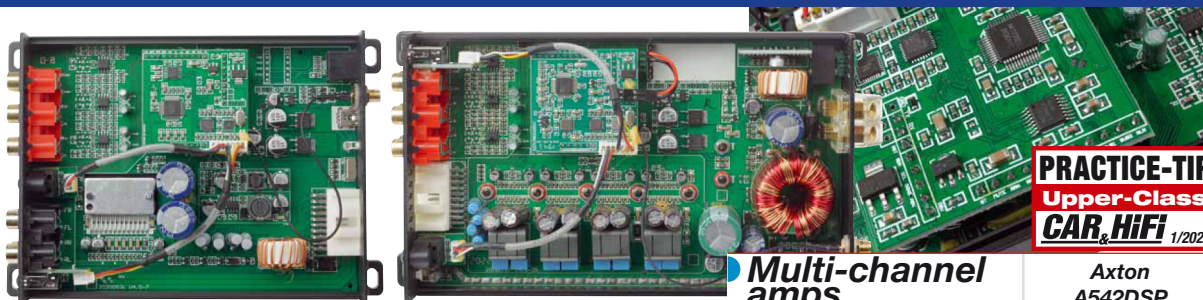
Outputs

- 1 x digital „coax“ (USB)
- 1 x digital S/PDIF (optical)

Equipment

- Streaming-interface for HiRes music
- Bluetooth 5.0 specs
- 24-bit HiRes Bluetooth with aptX HD
- HiRes streaming from smartphone with OTG-cable (volume not adjustable)

AXTON A542DSP A592DSP • TEST REPORT CAR & HIFI 1/2022



Left the A542DSP with 4-channel chip; centre the A592DSP with 4 low pass coils; right the digital board with DSP, Bluetooth and S/PDIF

contrast, the large A592 delivers a good 45 watts, which can also be enough for aftermarket speakers. Nevertheless, there is no additional power at 2 ohms, the issue here being solely compatibility if you have 2-ohm speakers available. What really pleased us was the upgrade to Hi-Res capable frequency range. The DSPs work at a 96 kHz sampling rate and the amplifiers deliver music up to 40 kHz – that is unique in this price category. With the Hi-Res streaming module it is even possible to enjoy wireless Hi-Res music. However the time alignment step size has not been adapted to the high sampling rate. Here the programmers have indeed taken a lot of trouble. The little A542DSP already impresses with a very appealing sound. Except for the modest maximum level there is nothing to fault here. The music comes over nice and vibrant, with both vocals and instruments sounding good. However, the A592DSP can go quite a bit better. Above all, in the bass it is more orderly and more powerful. Also as regards dynamic response the more powerful power amp has the edge. They handle spatial depth equally well, and in this respect we are happy with both.

Summary

The A542DSP and the A492DSP from Axton are very versatile amplifiers that enable an easy upgrade of factory systems. For an attractive price they bring DSP sound tuning and digital streaming in Hi-Res quality into the car – that is worth all due credit.

Technical Axton A542DSP/A592DSP

Inputs

- 4-CH high-level
- 4-CH RCA (A542DSP)
- 1 x digital S/PDIF (optical)
- 1 x digital Bluetooth streaming
- 1 x digital "coax" (USB)

Outputs

- 5-CH RCA
- Remote-out

App (Android 10 V1.0 in test)

EQ

Outputs:

- 10 or 31 band per channel
- Subwoofer (CH5): 5 band / CH
- Parametrical, +12 – -12 dB
- 20 – 20k Hz, 1 Hz steps, Q 0,3–9,9

Crossover

- 20 – 20k Hz, 1-Hz-steps
- Butterworth, 6-24 dB/oct.

Time and level

- Sampling rate 96 kHz, 10 ms steps (0,03 ms)

Outputs

- 0 – 420 cm (12,14 ms), 1024 samples
- Phase 0, 180°
- Level for input pairs and single outputs, adjustable in 0.1 dB steps

Equipment

- 5 setups
- App control (iOS and Android)
- 5 setups storable
- Auto turn-on (DC)
- Start-stop capable up to 7.2 V
- Bluetooth audio streaming with automatic source changeover
- 'Dynamic Bass', adjustable
- Noise gate, adjustable • Start-stop capable up to 6.1 V

Optional accessories

- Remote control A592DSP-RC (level, bass level, mute)
- Hi-Res streaming module ABT50

PRACTICE-TIP
Upper-Class
CAR & HIFI 1/2022

PRACTICE-TIP
Top-Class
CAR & HIFI 1/2022

Multi-channel amps

	Axton A542DSP	Axton A592DSP
Price	about 240 Euro	about 330 Euro
Distributor	ACR CH-5330 Zurzach info@acr.eu axton.de	ACR CH-5330 Zurzach info@acr.eu axton.de
Hotline		
Internet www.		

Summary

		Axton A542DSP	Axton A592DSP
▶ Sound quality	40 %	1,2	1,2
Bass foundation	8 %	1,5	1,5
Pressure	8 %	1,0	1,0
Transparency	8 %	1,0	1,0
Accuracy	8 %	1,0	1,0
Dynamics	8 %	1,5	1,5
▶ Lab	35 %	2,3	1,9
Power	20 %	3,0	2,5
Damping factor	-	-	-
Distortion	5 %	1,0	1,5
Signal/Noise Ratio	10 %	1,5	1,0
▶ Practice	25 %	0,9	0,9
Features	15 %	0,5	0,5
Workmanship electr.	5 %	1,5	1,5
Workmanship mech.	5 %	1,5	1,5

Technical data

	Axton A542DSP	Axton A592DSP
Channels	4	4
Power @ 4 ohms	30	47
Power @ 2 ohms	0	45
Power @ 1 ohms	0	0
Bridged power @ 4 ohms	0	90
Bridged power @ 2 ohms	0	0
Sensitivity max mV	1700	1700
Sensitivity min mV	1,7	1,7
THD+N (<22 kHz) 5W	0,026	0,018
THD+N (<22 kHz) half load	0,036	0,030
Signal/Noise Ratio DB(A)	91	85
Damping 20 Hz	-	-
Damping 80 Hz	-	-
Damping 400 Hz	-	-
Damping 1 kHz	-	-
Damping 8 kHz	-	-
Damping 16 Hz	-	-

Features

	Axton A542DSP	Axton A592DSP
Lowpass	10 – 20k Hz	10 – 20k Hz
Highpass	10 – 20k Hz	10 – 20k Hz
Bandpass	10 – 20k Hz	10 – 20k Hz
Bass-boost	via DSP	via DSP
Subsonicfilter	via DSP	via DSP
Phaseshift	via DSP	via DSP
High-Level inputs	•, 4CH	•, 4CH
Autosense	•, DC	•, DC
RCA outputs	•, 5CH processed	•, 5CH processed
Start/Stop compatible	• (7,2 V)	• (7,2 V)
Dimensions (L x W x H in mm)	145 x 114 x 40	185 x 114 x 40
Other	digital in, app, DSP, Bluetooth	digital in, app, DSP, Bluetooth

Upper-Class 1,5

CAR & HIFI 1/22
Price/performance: excellent

Top-Class 1,4

CAR & HIFI 1/22
Price/performance: excellent

"Low-priced plug&play upgrade with DSP+streaming."

"Low-priced plug&play upgrade with DSP+streaming."