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EMPHASER EA-MT1 EA-MT4 • TEST REPORT CAR&HIFI 4/2022

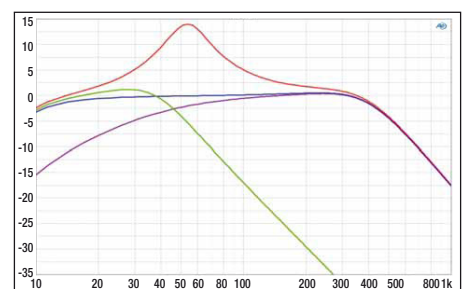
Emphaser EA-MT1 + EA-MT4:
Class D amp performance
in minimal space



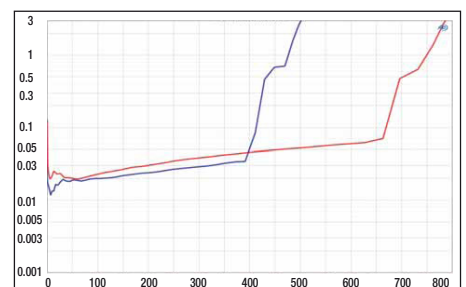
Ultra digital power amps in mini format

► At Emphaser a lot has happened recently. Beside speakers and subwoofers, in the Monolith series there are also power amps with plenty of power. The new EA-MT series now also adds mini amplifiers that we have in the editorial office for test.

Monolith amplifiers were considered very powerful up till now, and although very compact they are no longer really small by today's standards. For this reason the original M1, M4 and M4X have now been supplemented by the new MT1 and MT4 that with 212 x 110 millimeters take up very little space. The construction is very solid. They have a massive cast housing with the control panel on the top side being covered by a smart cast plate to produce a harmonious appearance. The MTs are naturally high-level capable so that they can also be operated from the factory radio, and there is Auto turn-on either by DC or music signal as required. Power is supplied to massive terminals of up to 20 mm², though the speaker terminals are of somewhat simpler construction for reasons of space. The configuration is very decent, with the EA-MT1 mono amp having a level remote control and a complete set of filters from subsonic and bass boost to phase control. The EA-MT4 has band-pass crossovers on all channels that extend to tweeter separation by using multiplier switches. Unfortunately there is not a circuit for overriding factory systems to test the speakers, so this has to be done in some other way. Suitability for start-stop vehicles should



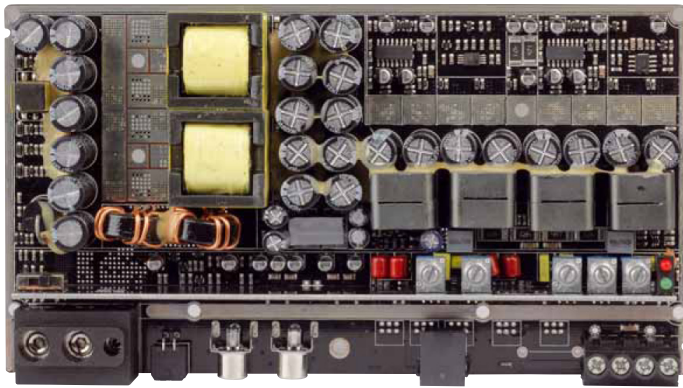
A full set of features give the MT1 a lot of flexibility. Everything fine here, only the subsonic filter looks a bit tired with its flat slope



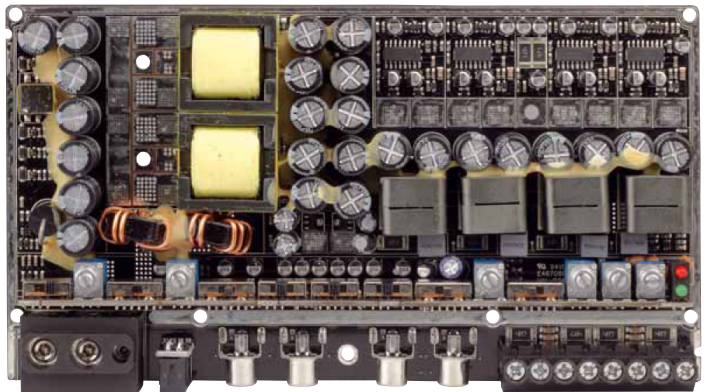
Ultra-low distortion, with plenty of power at 4 and 2 ohms

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Above the MT1 with two driver ICs and dual speaker terminals; below the MT4 with 4 drivers and 4 speakers



also be discussed with your specialist dealer. The hardware of the MT amplifiers is very impressive. On opening up several things are immediately noticeable. The mono power amp MT1 and the four-channel MT4 are basically the same amplifier. The Mono also has principally four amplifier paths, which are first coupled to form two pairs, each having a driver chip. Finally, the two pairs are then connected in parallel to form one channel, which is then 2-ohm stable like the channels of the MT4. In the case of the MT4 everything is naturally straight with four single-channel class D drivers, four MOSFET pairs and four filters. The power transistors in the power supply unit and amplification are the space savers. We do have discrete N-channel three-pin devices here, but they sit in the middle of the board and dissipate their heat through the tracks, where thermal conductive pads then provide the best contact with the matching cast housing. The floor plates are also in contact with the top sides of the transistors so that some heat can be dissipated here too.

Measurements and Sound

In the test lab the MTs evoke the proverbial wow response. If you look at the tiny power unit transformers of the

amps it seems impossible how much power comes out at the other end. By the way, this is not bought at the cost of electromog; we could not detect any kind of interference in the radio reception. On account of the very similar design it is no wonder that the same maximum power comes out of both amplifiers; in this case it is around 800 watts. That is really staggering given the super compact build format — and the amps do not even get very hot. One could almost be satisfied with that, but it gets even better as both amps go on to score top marks for extremely low distortion figures and super signal-to-noise ratios. Unleashed on the subwoofer the

EA-MT1 really shows its superiority. It fires up the bass beats in the vehicle so ardently that highly sensitive natures will wince. In the deep bass there is also more than enough punch so the MT1 does well, particularly in handling electronic deep bass notes. Even the good old bass drum hammers hard on the ear when required. As for clean articulation there is nothing to complain about, the amp playing clear and crisp up to peak volumes. Technically, the output level is easily enough even for fully-fledged woofers or double bass boxes. If you don't exactly need 1-ohm performance then it is guaranteed you will be happy with the MT1. The EA-



The control panel is concealed under aluminum covers; there are separate high and low inputs

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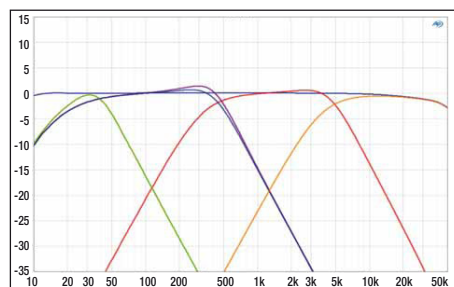
BEST PRODUCT
Upper-Class
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SOUND-TIP
Top-Class
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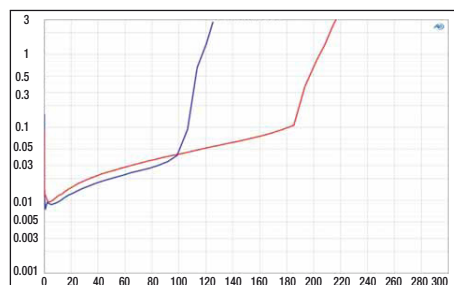
MT4 also shines with its beefy oomph. Even in the case of larger speaker systems with 20 cm woofers it lets rip with vigor. Small woofer boxes and built-in woofers in BMW and Mercedes are driven to top performance. Even learning to like „bad“ music can be fun with the MT4, needing no peak levels for enjoyment. More sedate music is also awesomely unraveled and everything that is going on in the music is sorted out faultlessly. Everything fine here!

Summary

With the EA-MT1 and EA-MT4 Emphaser has two top notch items in its product range. Immense power in minimal space, sparkling performance and fat output make these amps a great offer.



The bandpass crossovers of the MT4 can be set over a wide range. The low end is sufficient for the subsonic, the top end for separation of a tweeter. The slight overshoot on the low pass filter is bearable



The MT4 shines particularly at sonically important low outputs with extremely low distortion. Close on 120 watts at 4 ohms and over 200 watts at 2 ohms is impressive

Emphaser EA-MT1

Price	about 300 Euro
Distributor	ACR, CH-5330 Zurzach
Hotline	info@acr.eu
Internet	www.acr.eu

Summary

Sound quality	20 %	1,1	■■■■■
Bass fundamental	5 %	1,0	■■■■■
Neutrality	5 %	1,0	■■■■■
Clearance	5 %	1,5	■■■■■
Dynamics	5 %	1,0	■■■■■

Lab	55 %	1,0	■■■■■
Power	40 %	1,0	■■■■■
Damping factor	5 %	0,5	■■■■■
Distortion	5 %	1,0	■■■■■
Signal/Noise Ratio	5 %	1,0	■■■■■

Practice	25 %	1,1	■■■■■
Features	15 %	1,0	■■■■■
Workmanship electr.	5 %	1,0	■■■■■
Workmanship mech.	5 %	1,5	■■■■■

Technical Data

Channels	1
Power @ 4 ohms	475
Power @ 2 ohms	746
Power @ 1 ohms	0
Power bridgegd 4 ohms	412
Power bridgegd 2 ohms	0
Sensitivity max mV	280
Sensitivity min V	6,2
THD+N (<22 kHz) 5 W	0,014
THD+N (<22 kHz) half load	0,025
Signal/Noise Ratio dB(A)	91
Damping 20 Hz	372
Damping 40 Hz	372
Damping 60 Hz	372
Damping 80 Hz	372
Damping 100 Hz	372
Damping 120 Hz	372v

Features

Lowpass	50 – 500 Hz
Highpass	–
Bandpass	10 – 500 Hz
Bass-boost	0 – 156 dB/55 Hz
Subsonicfilter	0 – 40 Hz/12 dB
Phaseshift	0 – 180°
High-Level inputs	•
Autosense	•, DC or signal
RCA outputs	–
Start/Stop compatible	• (7.6 V)
Dimensions (L x W x H in mm)	212 x 110 x 35
Other	remote control

Emphaser EA-MT1

Top-Class 1,0

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Price/performance: excellent

“Sparkling performance in minimal space.”

Emphaser EA-MT4

Price	about 300 Euro
Distributor	ACR, CH-5330 Zurzach
Hotline	info@acr.eu
Internet	www.acr.eu

Summary

Sound quality	40 %	1,1	■■■■■
Bass	8 %	1,0	■■■■■
Neutrality	8 %	1,0	■■■■■
Transparency	8 %	1,0	■■■■■
Soundstaging	8 %	1,5	■■■■■
Dynamics	8 %	1,0	■■■■■

Lab	35 %	1,4	■■■■■
Power	20 %	1,5	■■■■■
Damping factor	5 %	2,0	■■■■■
Distortion	5 %	1,0	■■■■■
Signal/Noise Ratio	5 %	1,0	■■■■■

Practice	25 %	1,1	■■■■■
Features	15 %	1,0	■■■■■
Workmanship electr.	5 %	1,0	■■■■■
Workmanship mech.	5 %	1,5	■■■■■

Technical Data

Channels	4
Power @ 4 ohms	119
Power @ 2 ohms	206
Power @ 1 ohms	0
Power bridgegd 4 ohms	412
Power bridgegd 2 ohms	0
Sensitivity max mV	350
Sensitivity min V	>8
THD+N (<22 kHz) 5 W	0,009
THD+N (<22 kHz) half load	0,022
Signal/Noise Ratio dB(A)	96
Damping 20 Hz	144
Damping 40 Hz	140
Damping 60 Hz	136
Damping 80 Hz	121
Damping 100 Hz	–
Damping 16 kHz	–

Features

Lowpass	50 – 5k Hz
Highpass	20 – 4k Hz
Bandpass	20 – 5k Hz
Bass-boost	–
Subsonicfilter	via HP
Phaseshift	–
High-Level inputs	•
Autosense	•, DC or signal
RCA outputs	–
Start/Stop compatible	• (7.6 V)
Dimensions (L x W x H in mm)	212 x 110 x 35
Other	2, 3 or 4 CH In

Emphaser EA-MT4

Top-Class 1,2

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Price/performance: excellent

“Sparkling performance in minimal space.”