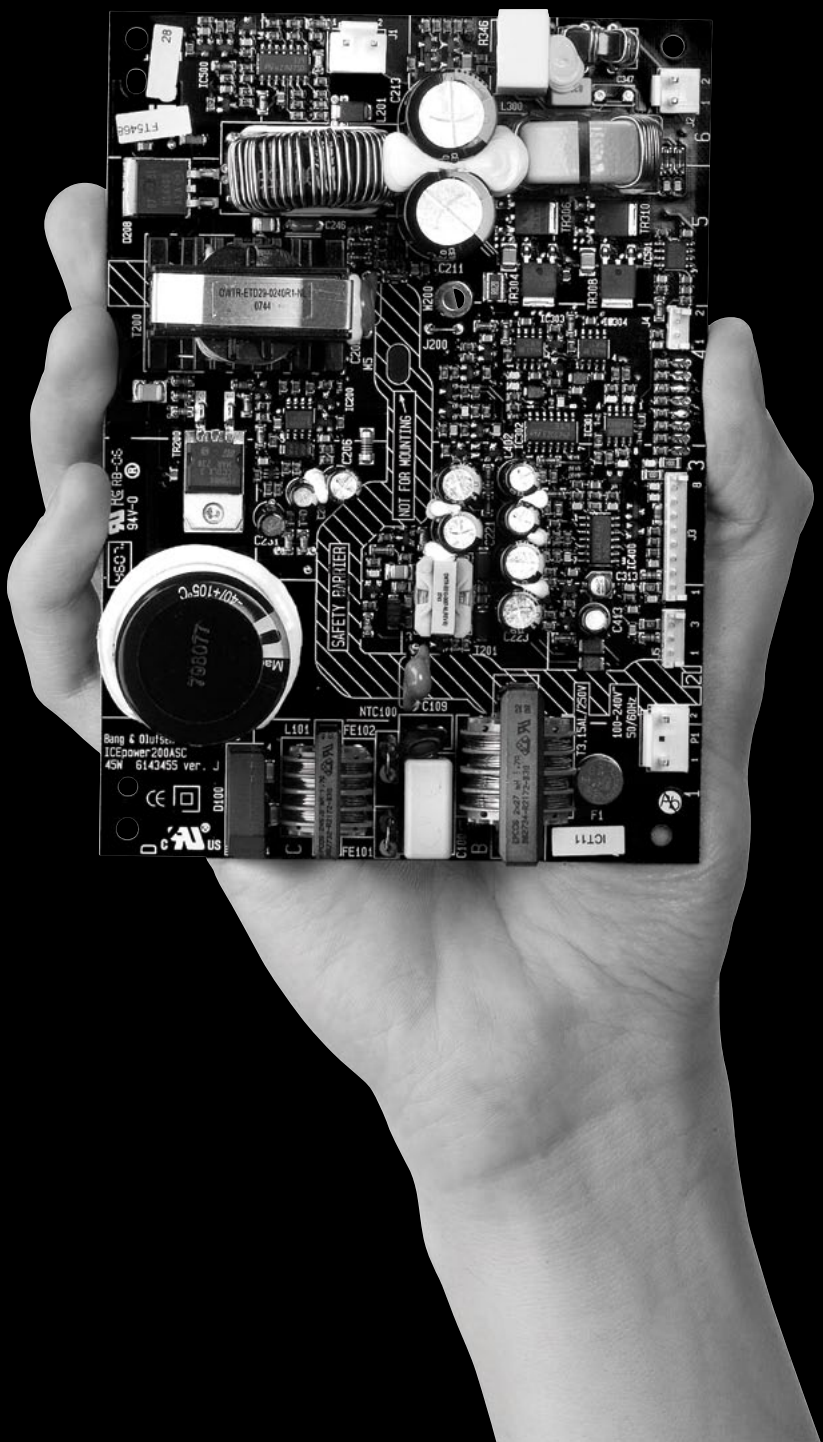
ICEpower ASC Series



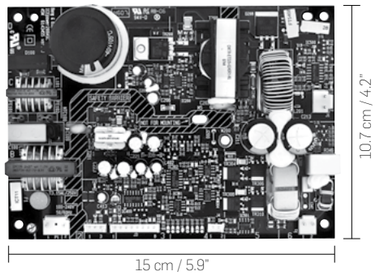
ASC Series Size and Power

1 x 200 watt

ICEpower200ASC

Amplifier and power supply

220W @ 1 % (20Hz - 20kHz, 4Ω)



ICEpower200AC

Amplifier

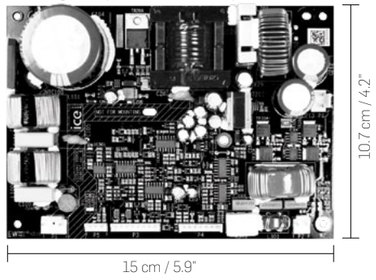
220W @ 1 % (20Hz - 20kHz, 4Ω)

1 x 300 watt

ICEpower300ASC

Amplifier and power supply

300W @ 1 % (20Hz - 20kHz, 4Ω)



ICEpower300AC

Amplifier

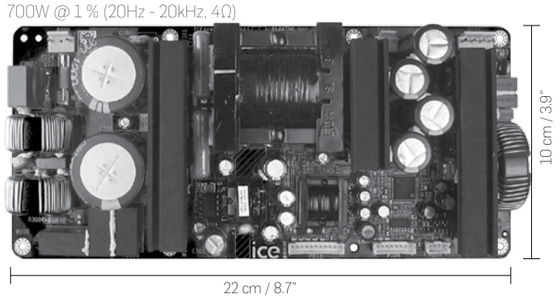
300W @ 1 % (20Hz - 20kHz, 4Ω)

1 x 700 watt

ICEpower700ASC

Amplifier and power supply

700W @ 1 % (20Hz - 20kHz, 4Ω)

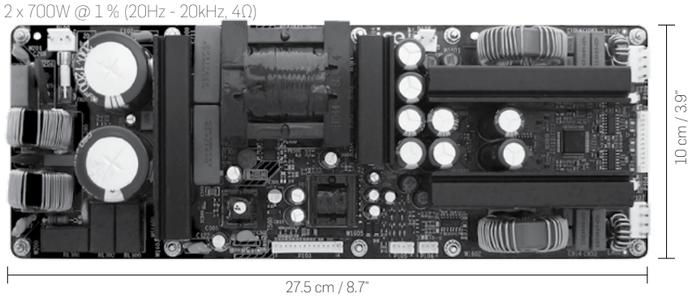


2 x 700 watt

ICEpower700ASC2

Amplifier and power supply

2 x 700W @ 1 % (20Hz - 20kHz, 4Ω)



Product pictures are illustrative and cannot be used for technical purposes

Dear Audio Manufacturer

In an increasingly competitive, fast paced world, cost and time to market is becoming ever more important. Besides manufacturing cost, product development, logistics and quality costs in many cases contribute significantly to the total cost. In order to provide audio manufacturers with a competitive edge, the ICEpower ASC Series has been designed with attention to cost through the entire product life cycle.

For example, to speed up your time to market and reduce your product development cost, we have added all system and housekeeping functions onto the ASC modules so you don't need to spend time and money developing them yourself.

Stocking and managing the logistics of delivering a product is expensive. To keep your stock and logistics cost to a minimum, the ASC Series is designed with a Universal Mains power supply, eliminating the need to stock both 115V and 230V versions of your product, thereby halving your necessary stock and saving you money.

A product that fails at the end user is expensive. The costs associated with loss of reputation, repairing, replacing or even recalling the product can be significant. The ASC Series has been developed with the highest attention to quality to ensure long product life, excellent reliability and very low field failure rates. When developing products with the ASC Series, you don't need to worry about quality costs.

So, hasn't all this focus on cost comprised the audio performance? Absolutely not. True to the ICEpower brand promise, the ASC Series class D amplifiers are based on proprietary ICEpower Class D technologies, ensuring crisp, clear and delicate audio reproduction with a tightly controlled bass response.

Want to listen for yourself? Please contact us at info@icepower.dk to order a sample. We look forward to hearing from you.

ASC Series Overview

The ICEpower ASC Series consists of intelligent audio power conversion solutions designed particularly for highly competitive consumer and professional audio applications. The key distinguishing qualities of these modules are excellent audio performance, a wide array of features, flexibility and application convenience.

The 200/300/700ASC/700ASC2 combine a high performance class D amplifier with a universal mains switch mode power supply with standby functionality, auxillary power supplies, wake on signal sense, 5V and 12V triggers (300ASC and 700ASC), status LED indicators and a DC-bus output for powering additional ICEpower 200/300AC amplifiers. Basically everything needed for a subwoofer, an active loudspeaker or a high-end amplifier.

The 200/300AC modules are essentially the amplifier part of the 200/300ASC. They are designed to be a “hanger” module, that can be powered from the DC-bus output of the 200/300/700ASC, 700ASC2, 250ASP* or 500ASP*. This means that a combination of these modules can be used to create anything from a subwoofer to a stereo amplifier or a 2- or 3-way active loudspeaker. This is what we call design flexibility.

The 200SC module is the power supply section of the 200ASC, without the amplifier. Using the 200SC in combination with 200AC modules allows for more design flexibility in compact, space constrained products. All the ASC amplifier modules are based on patented ICEpower HCOM and COM modulation and MECC control techniques. This enables excellent audio performance and high efficiency in an ultra-compact and lightweight package.

A full overview of features and specifications is on page 7.

* For more information about the ASP Series, please visit www.icepower.dk

Application Convenience

The ability to bring new products to the market fast, with a minimum of development investment required, is key to surviving in an increasingly competitive global market.

Using an ICEpower amplifier and power supply module is a turn-key approach to product development that frees up your development resources to focus on developing the product features that truly differentiate your product rather than spending time on developing amplifiers and power supplies.

To deliver on this promise, the ICEpower ASC Series is designed to require no additional heat sinking and is pre-approved for Safety, EMC and RoHS compliance with all certificates available through ICEpower.

The fact that no upfront investments are required for product development means that using an ICEpower standard module secures cost competitiveness even at low manufacturing volumes.

Applications

The rich feature set and superb audio performance of the ASC Series make the modules a perfect match for subwoofers, active loudspeakers and high-end consumer and professional audio applications. The typical applications include:

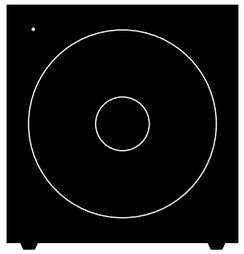
- Subwoofers
- High-end stereo and multi-channel amplifiers
- Active 2- and 3- way speakers
- Musical instrument amplifiers
- PA speakers and line arrays

Please see application examples on next slide.

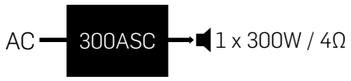
Application

Solution

Active subwoofer
1 x 300W / 4Ω

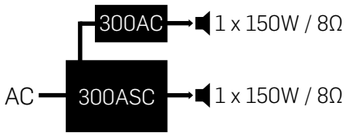


→ 1 x 300ASC



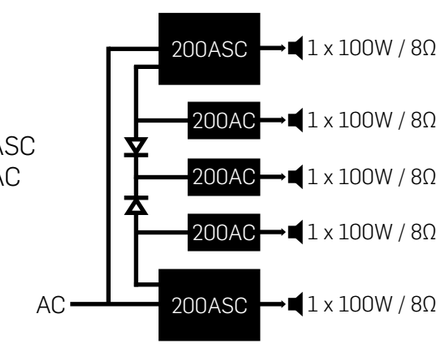
Stereo amplifier
2 x 150W / 8Ω

→ 1 x 300ASC
1 x 300AC



Home theater amplifier
5 x 100W / 8Ω

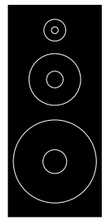
→ 2 x 200ASC
3 x 200AC



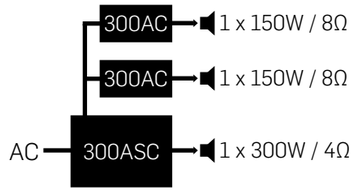
Application

Solution

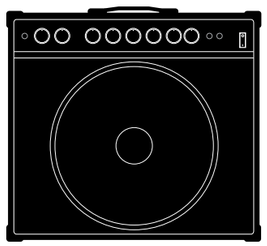
3-way active speaker / studio monitor
2 x 150W / 8Ω
1 x 300W / 4Ω



→ 1 x 300ASC
2 x 300AC

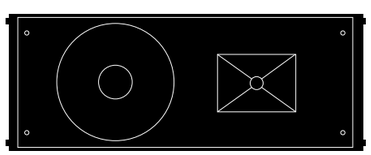


Bass amplifier
1 x 700W / 4Ω

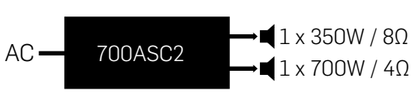


→ 1 x 700ASC

Line array and PA speaker
1 x 350W / 8Ω
1 x 700W / 4Ω



→ 1 x 700ASC2



Feature Set Summary

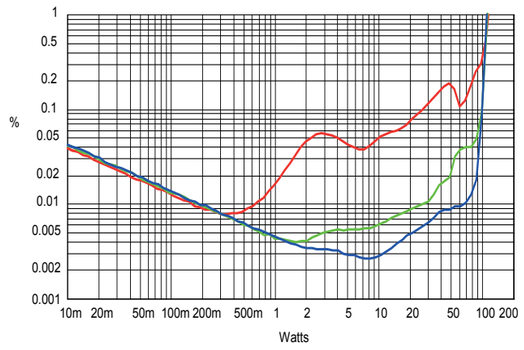
	200ASC	200AC	300ASC	300AC	700ASC	700ASC2
Universal Mains SMPS (85 - 264VAC, 47Hz - 63Hz)	✓		✓		✓	✓
ErP (1275/2008/EC) compliant standby mode with less than 0.5W power consumption	✓	✓	✓	✓	✓	✓
+/-12V Regulated auxillary power supply DC output	✓		✓		✓ (+/-15V)	✓ (+/-15V)
+5V Regulated auxillary power supply DC output			✓		✓	✓
Auto-start or wake up on signal (signal sense)	✓		✓		✓	✓
DC-Bus output for powering additional amplifiers	✓		✓		✓	✓
Balanced input and output	✓	✓	✓	✓	✓	✓
Soft start-up and mute/de-mute	✓	✓	✓	✓	✓	✓
Comprehensive protection scheme (thermal, over-current, high-frequency, under-voltage)	✓	✓	✓	✓	✓	✓
Mechanically rugged construction (Tested for 70G shocks in six directions)	✓	✓	✓	✓	✓	✓
Pre-approved for Safety, EMC and RoHS compliance	✓	✓	✓	✓	✓	✓

Key Performance Parameters

	200ASC	200AC	300ASC	300AC	700ASC	700ASC2
Output Power 1 % THD+N, 20 Hz - 20 kHz	220W (4Ω) 110W (8Ω)	220W (4Ω) 110W (8Ω)	300W (4Ω) 150W (8Ω)	300W (4Ω) 150W (8Ω)	700W (4Ω) 350W (8Ω)	2 x 700W (4Ω) 2 x 350W (8Ω)
Output Power 10 % THD+N, 20 Hz - 20 kHz	290W (4Ω)	290W (4Ω)	380W (4Ω)	380W (4Ω)	800W (4Ω)	2 x 800W (4Ω)
Minimum load impedance	3Ω	3Ω	2.5Ω	2.5Ω	2.5Ω	2.5Ω
Maximum amplifier efficiency	-	89 %	-	90 %	-	-
Maximum total amp+psu efficiency	79 %	-	80 %	-	84 %	84 %
Supply voltage input	85-264 VAC	22-50 VDC	85-264 VAC	22-55 VDC	85-264 VAC	85-264 VAC
Peak output current	12.5A	12.5A	20A	20A	28A	30A
Dynamic range	110dB	110dB	113dB	113dB	117dB	117dB
Output referenced idle noise (A-weighted)	90µV	90µV	75µV	75µV	70µV	70µV
THD+N 1W/1kHz	0.008%	0.008%	0.006%	0.006%	0.006%	0.006%
Output impedance	10 mΩ	10 mΩ	6 mΩ	6 mΩ	7 mΩ	7 mΩ

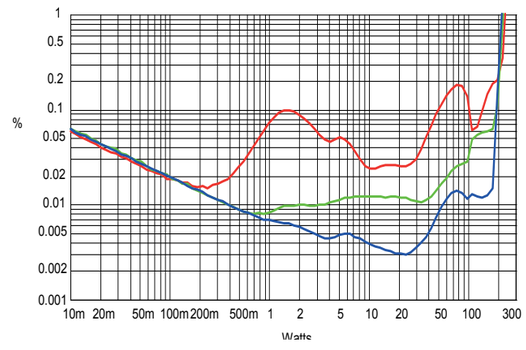
Audio Performance 200ASC/AC

200ASC/AC THD+N vs. output power



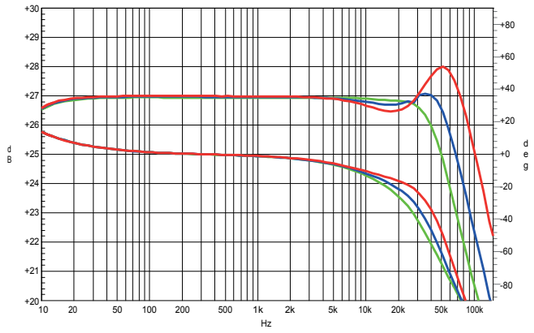
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (8Ω), 110Vac/50Hz

200ASC/AC THD+N vs. output power



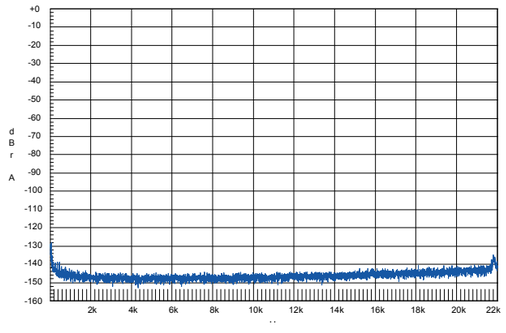
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (4Ω), 110Vac/50Hz

200ASC/AC Frequency Response



In 4Ω, 8Ω and open load. Top - amplitude. Bottom - phase

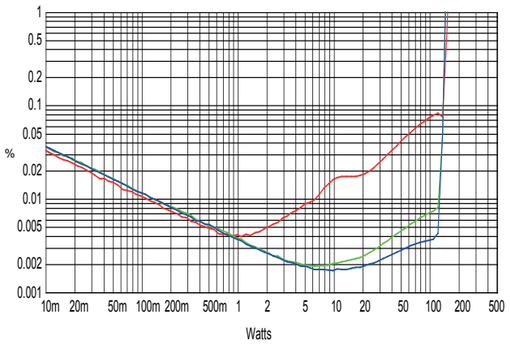
200ASC/AC Idle Noise



Idle noise (16K FFT). Residual = 90µV(A)

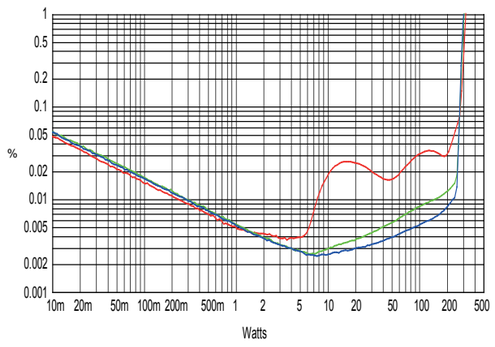
Audio Performance 300ASC/AC

300ASC/AC THD+N vs. output power



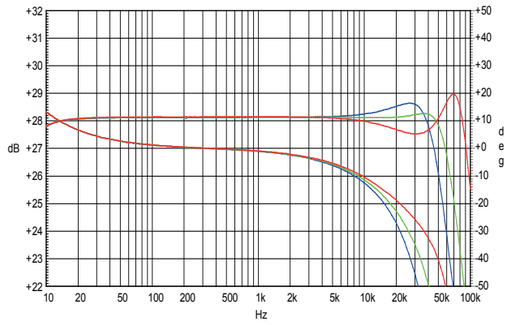
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (8Ω), 110Vac/50Hz

300ASC/AC THD+N vs. output power



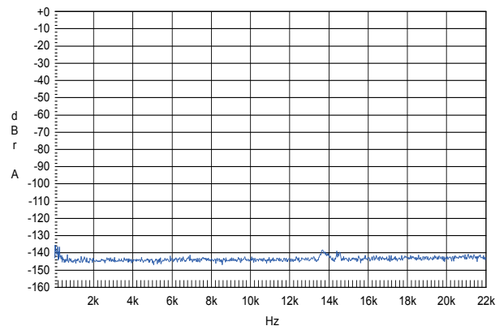
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (4Ω), 110Vac/50Hz

300ASC/AC Frequency Response



In 4Ω, 8Ω and open load. Top - amplitude. Bottom - phase

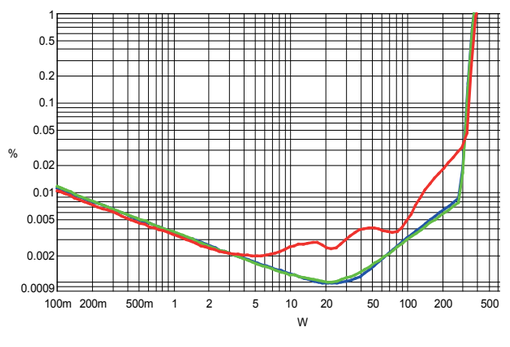
300ASC/AC Idle Noise



Idle noise (16K FFT). Residual = 75µV(A)

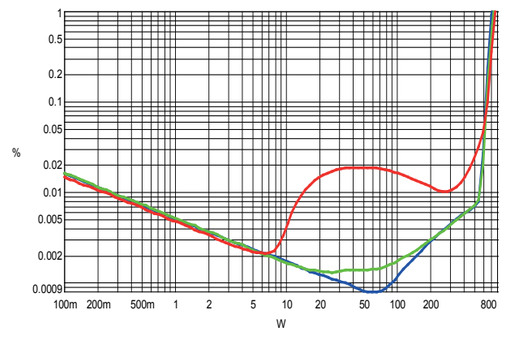
Audio Performance 700ASC/700ASC2

700ASC/700ASC2 THD+N vs. output power



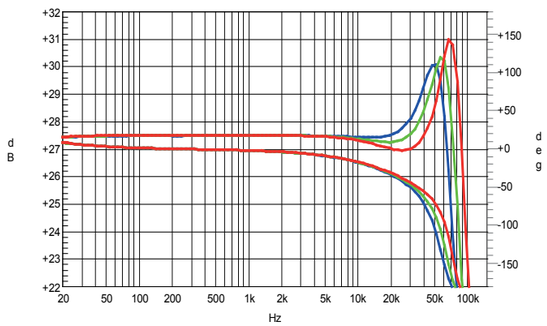
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (8Ω), 110Vac/50Hz

700ASC/700ASC2 THD+N vs. output power



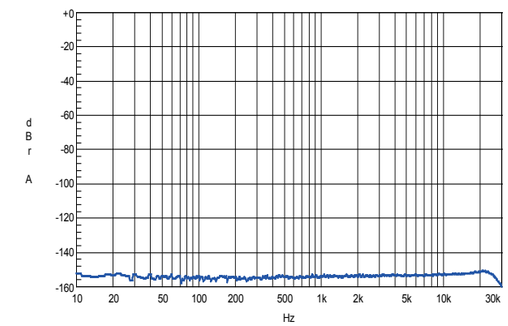
THD+N vs. Po at 100Hz, 1kHz and 6.67kHz[8] (4Ω), 110Vac/50Hz

700ASC/700ASC2 Frequency Response



In 4Ω, 8Ω and open load. Top - amplitude. Bottom - phase

700ASC/700ASC2 Idle Noise



Idle noise (16K FFT). Residual = 70µV(A)

About ICEpower

ICEpower is an innovative Danish company developing and manufacturing energy efficient, high performance class D audio solutions for consumer, professional, automotive and portable audio applications. Our products are based on a range of innovative, proprietary technologies that deliver the best audio performance, efficiency and power density in the industry.

The company was founded in 1999 by Bang & Olufsen and Dr. Karsten Nielsen, based on the technologies developed in a joint research project between Bang & Olufsen and the Technical University (DTU), where Karsten Nielsen managed to achieve significant improvements in efficiency and audio quality of switching technologies. Today, ICEpower is a company of 40 employees and an independent subsidiary of Bang & Olufsen.

We are proud of the fact that ICEpower was one of the first companies to pioneer the audio industry's change from analogue technologies to highly efficient switching technologies, bringing about a true paradigm shift in the industry. Our technologies have raised the efficiency of audio amplifiers and power supplies from 50-70%, possible with traditional analogue technologies, to 80-95% – making audio devices "greener".

Today, we continue our focus on enhancing the efficiency, audio performance and power density in the audio power conversion chain. We work hard to stay on the forefront of technological development in our niche, continuously working to enhance our technological portfolio through in-house development, academic collaboration and partnerships with other industry players.

Since our establishment, we have cooperated with over 100 loyal customers and partners all over the world. Among them are some of the world's most respected companies, such as Bang & Olufsen, Bowers & Wilkins, Pioneer, TEAC, Samsung, ASUS Computers, Toshiba, Sanyo and Audi.

Please visit us at ICEpower.dk for further information about our products, our technologies and our company.

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