JAM TECHNOLOG

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Frequently Asked Questions

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REVA™

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True Fidelity™

REVA™

1. Is REVA an amplifier?

No. REVA is an amplification architecture that outputs up to four tim the available power supply voltage using a patented process - Varia Impedance Transformation.

2. What makes REVA unique?

REVA is the only audio amplification technology that can directly del such high power at such high quality from a limited power supply. Th means that REVA can deliver more power to the speakers without resorting to DC/DC converters or separate, ancillary transformers.

3. When will REVA be available for licensing?

JAM Technologies has developed and produced prototype units whi demonstrate the REVA principles. For many applications, the techn is ready now for licensing. OEMs can schedule a demonstration of R by contacting JAM Technologies.

4. What is Class J?

Audio amplification is broken down into classes based on output sta architecture.

Class A operation is defined as the selection of a bias point and an signal value that will allow current through the output device during t complete input cycle.

Class B operated amplifiers have the bias set near the cutoff point s

when a sine wave input signal is applied, each output device conduc for approximately half a cycle.
In the Class A/B amplifier, the operating bias point and the alternatir input voltage are set so that each output device conducts for somew more than half but less than the entire input voltage cycle.
An amplifier can also be biased so that there is output current for les than one-half of the input signal voltage cycle. Under these conditior the amplifier is said to be operating in Class C.
Class D broadly refers to any amplifier using a saturated switched output. Modulation of the switched output can be accomplished by variences in pulse width (PWM), phase (bi-phase), frequency (delta-sigma), etc. Output pulses are usually constant amplitude, although amplitude is sometimes used for volume control. The switched outpı signals are almost always filtered to remove high frequency distortio products. Some Class D amplifiers can accept a digital input signal.
Class J is different in that it uses a patented technique called Variab Impedance Transformation to push the output voltage far beyond th available input. Accepting a digital signal, it produces an unprecedei high resolution output signal and suffers none of the drawbacks of traditional amplification techniques. Best of all, it is inexpensive to manufacture, so it saves OEMs money.

5. How does REVA differ from E-Bridge?

While they both produce a high resolution "True Fidelity" output, the different architectures. REVA is a Class J architecture which can ex the voltage rails by up to a 4:1 margin. E-Bridge relies on a special f of pulse width modulation (PWM), with a proprietary output stage configuration which could, technically, be separately classified.

6. Would a Class D amplifier with a DC/DC converter accomplish the same results as REVA?

No. While producing the same amount of power is of course possibl this way, cost and quality would probably both suffer.

7. What are the power limits of REVA?

REVA produces voltages up to 4 times the available voltage. For a 5 power supply, that means about 20 watts per channel into an 8 Ohm load. For 14V power supplies, that would mean over 300 watts per channel into a 4 Ohm load. The technology works equally well at mil and kilowatt levels.

8. How can REVA switch at 2.9 Ghz?

It can't. True Fidelity techniques deliver resolution far beyond most c source data without resorting to problematic high frequencies. Instea switching the semiconductor device faster, as does delta-sigma technology, REVA applies Digital Charge Modulation (TM) to hone t signal to extremely precise levels.

E-Bridge™

1. What does E-Bridge mean?
2. How does JAM's E-bridge differ from conventional Class D technology?

1. What does E-Bridge mean?

E-bridge is an output stage topology that differentiates JAM's techno from generic Class D technology, which often uses an "H-bridge" configuration. While the differences are technically significant, a sho hand term was developed to capture the essence of those differenc

2. How does JAM's E-bridge differ from conventional Class D technology?

E-bridge technology uses the principle of presenting the difference o multiple simultaneously-modulated signals to the speaker, and can therefore attain much greater dynamic range than Class D technolo whether PWM, delta-sigma, bi-phase, etc., which presents a single modulated signal to the speaker. In order to achieve acceptable dyn range from a single modulated signal, extreme and usually expensiv measures are necessary to combat this inherent lack of resolution.

3. How is E-bridge implemented?

E-bridge was designed specifically for split implementation. The logi core is free from complex and calculation-intense algorithms, so it ca easily be folded into existing logic chips or DSPs. JAM estimates the logic requirements at about 10,000 gates. Once the common core lo is present, OEMs can use either discrete or integrated implementati the E-Bridge output stage to achieve anywhere from milliwatts to kilowatts per channel - using the same logic core. This allows for po upgrades without the need to develop a new logic core.

4. How much does E-bridge cost to manufacture?

As with most amplifiers, this varies a great deal with power. JAM furnishes representative discrete implementation bills of materials a reference designs to OEMs that have executed a mutual non-disclos agreement.

5. How do other technologies compare with E-bridge?

JAM Technologies is not alone in digital amplifier development, but approaches digital amplification with a significantly different philolos than other companies. Almost all other digital amplification technolo being marketed today are based on techniques developed some tim ago, techniques that inherently accept lack of resolution as a given. Resultantly, recent developments in these technologies have largely centered on corrective or compensatory measures to improve sonic characteristics. Drastic measures, such as massive DSP processing excessive output frequencies (with attendant EMI), are often require achieve acceptable sound quality. The central action of a delta-sign converter, for example, is that of chasing its own errors. E-bridge technology, like REVA, started with the viewpoint that these errors a not acceptable; that clean sound should start clean, rather than requ fixing. This philosophy has paid off in the sonic clarity available from bridge technology.

True Fidelity™

1. What is True Fidelity?

True Fidelity is a description of the output signal from either of JAM's patented REVA or E-Bridge technologies. In the past, technology lin audio to low fidelity. Then, in the 1960's, improvements in audio processing and reproduction allowed for high fidelity sound. Since th time, there has been no major advancements in audio amplification technology... until now.

2. What makes True Fidelity better than the competition?

Both REVA and E-Bridge are unique, but for different reasons. REV True Fidelity produces unprecedented quality audio, but has the advantage of being able to exceed the available voltage supply rails up to a 4:1 margin. This means that REVA can deliver several times more power to the load than the competition's technologies for abou same price.

E-Bridge True Fidelity is unique in that it is a low-cost, high resolution amplification technology that is ideally suited for better quality audio applications where available power is adequate for the desired output level.

3. How do I get True Fidelity?

True Fidelity technologies are available for license to manufacturers audio appliances and semiconductors. For more information, Conta JAM.