High-Efficiency All-Digital Amplification
The Growth of the Class D, High-Efficiency Amplifier Market

Today’s consumers insist on buying lifestyle-oriented products that deliver rich experiences while minimizing interaction with the equipment. Product designs must be compact, sleek and elegant while providing ever-higher levels of audio performance. High-efficiency Class D amplifiers are the key to enabling these designs with their small size, high fidelity and ability to operate without space constraints.

Class D amplifiers share of the total amplifier market will grow significantly due to size, weight and efficiency advantages.

DDX® All-Digital Amplification is the Class D Solution of Choice

Source: Forward Concepts
DDX® is a unique, patented 100% digital audio amplification solution that offers unrivaled power, performance and intelligence to enable the design and on-time delivery of superior audio products.

**All-Digital Performance**

DDX all-digital output from source to speakers eliminates the need for DAC, reducing total solution cost.

**Integrated Intelligence**

DDX Controllers combine an advanced digital audio processor with Apogee’s patented DDX processing that can support multiple channels of high-efficiency DDX amplification. They replace analog signal processors with digital signal processing for adding rich, high-quality audio features such as high resolution audio formats, EQ soundstage, 3D/Surround Sound and more.

Apogee’s Automode™ preset audio processing modes enable rapid evaluation, design and implementation of advanced features without the hassle of customized programming.

**Patented 3-State Damped Ternary Design:**
- No turn-on “pops”
- True zero output that completely eliminates "hiss"
- Low EMI and AM interference
- Inherent power supply rejection
- High-efficiency

**High-Efficiency, More Power, Less Space**

DDX high-efficiency eliminates the need for bulky heat-sinks reducing product size and cost. Choose options from 15 to 240 watts with robust, integrated protection circuitry.
DDX® Products
Inspired Digital Audio Solutions

All-In-One Integrated Amplifiers
DDXi™ solutions are the world's first fully integrated, all-digital, high power audio amplifiers that include a complete set of digital audio processing features. They combine Apogee’s patented DDX amplification with a powerful audio processor in a single IC that reduces system cost, size and complexity by eliminating the need for a separate audio processor, digital to analog converter and amplifier chips.

DDXi-2051, 2101, 2161 for Stereo New!
• Stereo or 2.1 channels
• 2 x 40/60/80 watts or 2 x 20/30/35 watts + 1 x 40/60/80 watts
• Supports 24-bit digital audio at sample rates inputs from 32kHz to 192kHz
• QSound QXpander™, BBE® and BBE® Viva

Applications: Flat-Panel TVs, Mini/Micro Systems, Multimedia Powered Speakers, Gaming, Distributed Audio Systems

DDX Controllers
DDX Controllers offer audio processing power, superior intelligence and full multi-channel functionality. They are ideal for a platform approach – designs can be made once for a product line using different DDX power device configurations.

DDX-8001 for Home Theater
• Up to 8 channels of DDX
• DVD-Audio and SACD/DSD
• 32 preset EQ soundstage selections
• Mixing and crossover presets
• Dual independent limiters featuring auto preset anti-clipping or Dynamic Range Compression (DRC) modes
• QSound QSurround™ 5.1

Applications: Home Theater in a Box, DVD & AV Receivers, Powered Home Theater Speakers

DDX-2001 for Stereo New!
• Stereo or 2.1 channels of DDX
• Four 28-bit user programmable biquads (EQ) per channel
• 32 EQ soundstage selections
• Mixing and crossover presets
• Dual independent limiters featuring auto preset anti-clipping or Dynamic Range Compression (DRC) modes
• QSound Labs’ QXpander and BBE Viva

Applications: Flat-Panel TV, Mini/Micro Systems, Multimedia Powered Speakers

DDX Power Devices
DDX industry standard power solutions provide the broadest set of configuration possibilities to suit a wide range of audio applications and output requirements up to 240 watts.

DDX-2200 & DDX-2240 High Power Solutions New!
• 100 watts per channel in stereo into 8 ohms or 200 watts in mono into 4 ohms
• 120 watts per channel in stereo into 6 ohms or 240 watts in mono into 3 ohms

Applications: High power DVD & AV Receivers, Mini Micro Systems, Multimedia Speakers

DDX -2052, 2062, 2102 Mini-Package Power Devices New!
• Mini-Package ICs reduce the space occupied on a printed circuit board by 50%
• Power from 40 watts to 130 watts per channel
### Home Theater Applications (5.1, 6.1, 7.1 Channels)
**DVD/AV Receivers, Powered Speakers, Home Theater-in-a-Box**

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<th>APPLICATION TOTAL POWER RANGE</th>
<th>CONTROLLER</th>
<th>APPLICABLE POWER DEVICES</th>
<th>REFERENCE BOARDS</th>
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<td>&lt;200 watts</td>
<td>DDX-8229</td>
<td>DDX-2052, 2062, 2102</td>
<td>RB-86175, 86176</td>
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<td>200W – 400 watts</td>
<td>DDX-8001</td>
<td>DDX-2052, 2062, 2100, 2102, 2120, 2200, DDX-2240</td>
<td>RB-86210, 86300, 86301, 86302, 86303</td>
</tr>
<tr>
<td>400 watts &amp; higher</td>
<td>DDX-8001</td>
<td>DDX-2100, 2120, 2160, 2200, 2240</td>
<td>RB-86530, 86600</td>
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### Stereo & Mono Applications (1, 2, 2.1, 2.2, 4 Channels)

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>ALL-IN-ONE SOLUTION OR CONTROLLER</th>
<th>APPLICABLE POWER DEVICES</th>
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<tr>
<td>Flat-Panel TV 10-25 watts</td>
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<tr>
<td>Mini/Micro Systems with DSP ≤ 160 watts</td>
<td>DDX-2051, 2101, 2161, ATA-120</td>
<td>DDX-1050, 1060, 1080, 2052, DDX-2062, 2100, 2102, 2120, DDX-2160, 2200, 2240</td>
<td>RB-2051, 2101, 2161, EB-120</td>
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<tr>
<td>Custom Install Audio &gt; 160 watts</td>
<td>DDX-2001, 8229</td>
<td>DDX-2161, ATA-120 with FETS</td>
<td>RB-2161</td>
</tr>
<tr>
<td>Powered Subwoofer Mono</td>
<td>DDX-2161, ATA-120</td>
<td>DDX-2052, 2062, 2100, 2102, DDX-2120, 2160, 2200, 2240</td>
<td>RB-86302, 86303, 86530</td>
</tr>
<tr>
<td>Gaming (Slots, Arcade)</td>
<td>DDX-2051, 2101, 2161, ATA-120</td>
<td>DDX-2161, ATA-120 with FETS</td>
<td>RB-2051, 2101, 2161, EB-120</td>
</tr>
<tr>
<td>Automotive Trunk Amps</td>
<td>DDX-8001, 8229</td>
<td>DDX-2161, ATA-120</td>
<td>RB-86302, 86303, 86530</td>
</tr>
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**Powered by DDX® Applications & Solutions Guide**

**Xbox® 5.1 Surround Sound Speaker System**

**RX2 5.1 Surround Sound Chair**