**Enabling Automation and Integration with Third Party Tools**

The Mentor A2B Analyzer Application software provides a greatly simplified and easy-to-use graphical interface for rapidly provisioning A2B networks, and then immediately realizing them with the A2B Analyzer. The A2B Analyzer Service is a “headless” background daemon developed for those users wishing to create their own applications while leveraging the capabilities of Mentor’s graphical A2B Application. It is intended for scenarios where application-to-application automation is required, such as end-of-line test platforms.

**Flexible Application Programming Interface (API)**

The A2B Analyzer Service provides a networked, remote procedure call (RPC) style application programming interface (API) suitable for any programming language or environment that supports networking capabilities. This covers nearly every modern programming language including C/C++, C#, Python, JavaScript, Java, Lua, Perl, Bash, and many others. The API itself utilizes JSON-RPC to format the requests/responses but is agnostic of the transport mechanism and supports HTTP, WebSocket, and TCP.

**Supported Functions**

The A2B Analyzer Service has APIs that are organized into following functional areas as described in the table below:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A2B GPIO</td>
<td>Provides access to A2B GPIO on the Analyzer and GPIO on other nodes in the network.</td>
</tr>
<tr>
<td>Device</td>
<td>Provides access to the A2B Analyzer settings and configuration.</td>
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<tr>
<td>Diagnostic</td>
<td>Provides API calls for debugging client and/or network activity.</td>
</tr>
<tr>
<td>External GPIO</td>
<td>Provides access to the external GPIO pins on the outside of the A2B Analyzer.</td>
</tr>
<tr>
<td>Peripheral</td>
<td>Provides the ability to program I2C connected peripherals on nodes in the A2B network (e.g. EEPROM, DSP, CODEC, etc).</td>
</tr>
<tr>
<td>Platform</td>
<td>Provides access to base service functionality that does not necessarily need an attached Analyzer.</td>
</tr>
<tr>
<td>Stream</td>
<td>Provides access to creating/starting/stopping audio streams.</td>
</tr>
</tbody>
</table>

**BENEFITS:**

- Facilitates quick, high volume testing of A2B components
- Adds minimal overhead; runs as a background service
- Simplifies application-to-application automation
- Enables rapid prototyping using popular scripting languages

**PRODUCT FEATURES:**

- Automation interface for the A2B Analyzer System
- “Headless” operation with an available graphical management web page
- Network-based API with control via JSON-RPC over HTTP, WebSocket, or TCP protocols
- Supports subscription to Analyzer events and notifications
- Discoverable via Service Registry component
- Real-time audio playback/capture available via Mentor ASIO Driver (Windows only)
- Supports A2B audio testing with tools from Audio Precision and Listen Inc.
- Directly supports Mentor A2B Analyzer Application SW session files
- Extensive API documentation and tutorials
- Supports Linux and Windows platforms

**MULTIPLE USE MODELS:**

- Test & validation
- Production/end-of-line testing
- Engineering
- Integration with third-party tools
Service Management Utility

Although the A²B Analyzer Service is “headless”, a simple graphical management web page is available through a web browser. This displays A²B Analyzer Services that are running and registered on the host platform. For each Analyzer Service it shows the A²B Analyzers that could be connected/disconnected to the service.

The Service management page also includes a Node Simulation tab that provides the user a view into how the A²B Analyzer Service has been programatically configured. It responds dynamically to configuration changes to the service even if they are not initiated from this page. This is an easy way to visually confirm the stream configurations that are available to the service. The utility also provides a simple method to load/save existing Mentor Network Builder session files (.ses) without programmatic API calls to the service.

Facilitating Audio Testing

The A²B Analyzer Service, when attached to a licensed Analyzer, can source and sink audio data to/from PCM encoded WAV sound files. On Windows platforms, when used with the available Mentor ASIO driver, real-time audio streaming is also available to ASIO client software. Popular clients such as Audio Precision APx Analyzer, Listen Inc. SoundCheck and Audacity are supported, enabling easy automation of A²B audio testing for components such as microphones, accelerometers etc.

The A²B Analyzer Service provides a vital next step for developers to leverage the simulation capabilities of the A²B Analyzer hardware in new and interesting use cases. With its flexible APIs, nearly every feature available through the existing graphical interface in the A²B Node Simulation is also available programmatically for custom applications.

Licensing & Ordering Information

The software is licensed to the A²B Analyzer device, and can be ordered from Mentor using the following part numbers:

required:
- PN 270081: A²B Analyzer System “Gen 2”
- PN 275465: A²B Analyzer Service Application Software

and optionally:
- PN 275466: ASIO Driver Feature for Analyzer Service App (requires PN 270083: ASIO Driver Add-On)

For the latest product information, call us or visit: http://go.mentor.com/a2b

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