Crestron® Avia™ Audio Tool (SW-AAT)

Guided Project Configuration Method

The Crestron Avia™ Audio Tool (SW-AAT) now includes a Guided Project configuration method that offers a timesaving, simplified means to configuring audio routing for teleconference and presentation audio systems. The Guided Project may be used to manage the most common UC system configuration tasks and ensure that best practices are followed for a streamlined system with consistent audio performance. As a result, system quality is assured, and time spent configuring is greatly reduced.

The Guided Project handles the DSP signal routing details. This allows the programmer to open any of the familiar workspace objects to make acoustic adjustments such as setting the room microphone level, selecting the conference playback level, or entering SIP server credentials for test calls.

The Guided Project Method

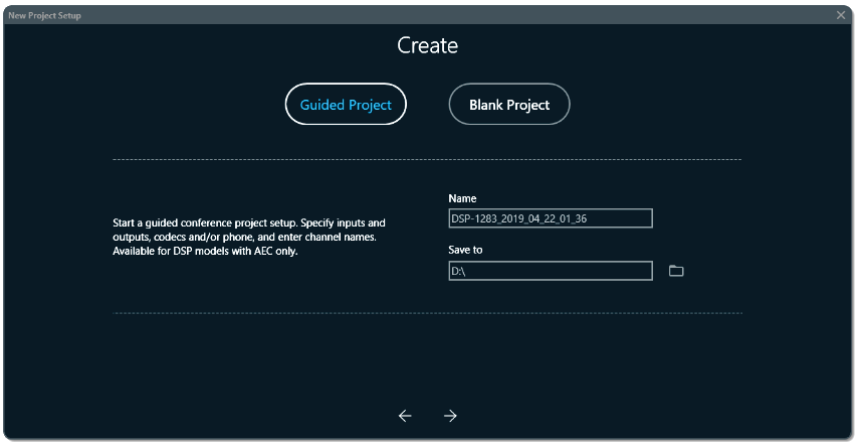
The Guided Project method offers the automation of routing and channel strip configuration by providing shortcuts every user can appreciate. Once created, each Guided Project presents a series of selections for configuring the following:

- Microphones
- Codec and presentation inputs
- Auxiliary routes and outputs to codecs
- Amplifiers and loudspeakers

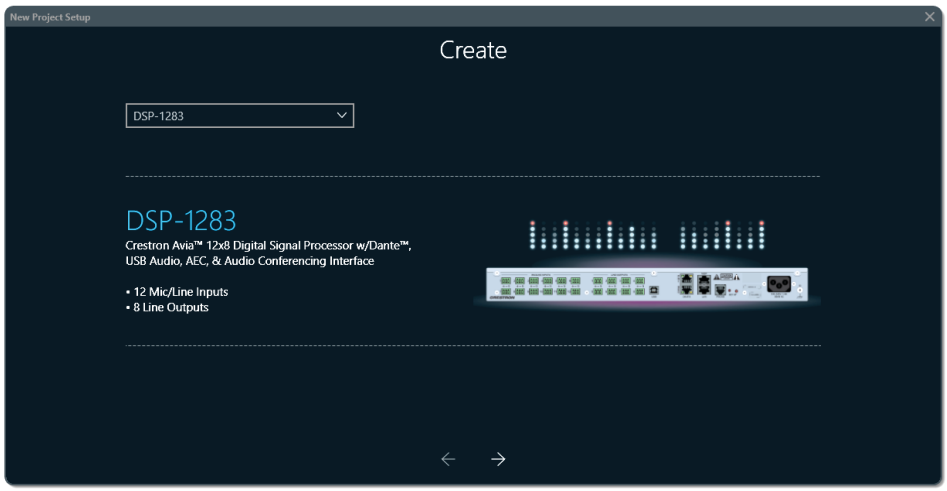
NOTE: Experienced users requiring advanced configurations for multiple codecs or presentation systems may consider starting with the Blank Project. The Blank Project method provides the complete pallet of I/O, signal routing and DSP signal processing in a production-style control surface layout.

To launch a Guided Project:

1. Navigate to the Crestron Avia™ Audio Tool's New Project Setup screen.
2. Select Guided Project. Enter a project name and select a location to save your project file.



3. Click the right arrow at the bottom of the page. The active selection is displayed with a brief model description.

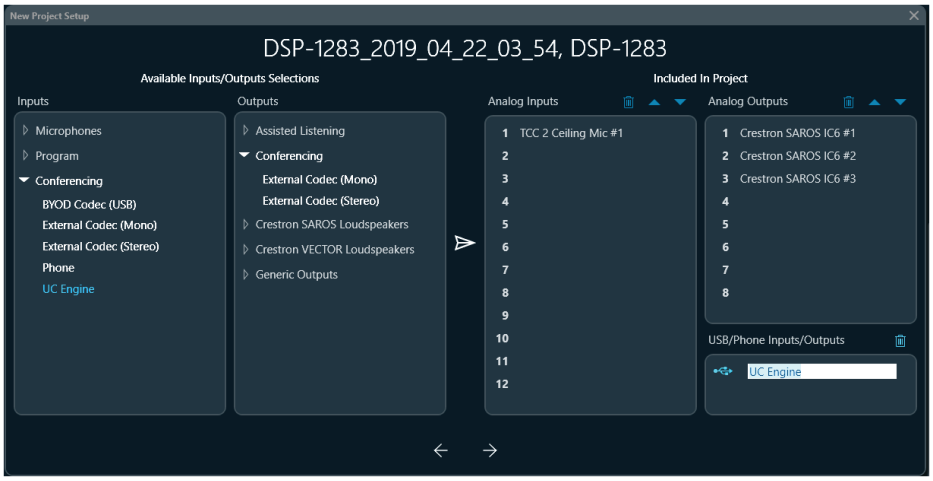


4. Select a device from the drop-down menu.
5. Click the right arrow to begin configuring the device.

Add Functionality

Available Input and Output Selections are displayed in the left half of the menu; devices that are included in the project are displayed on the right half of the menu. The numbering of the Included In Project items corresponds to the connector on the unit's rear panel. Inputs and Outputs for USB, POTS and VoIP is displayed in the bottom right.

In the following example, the DSP-1283 has 12 analog inputs and 8 analog outputs.



Making device additions to the project and adding functionality is simple. Click on the Microphones, Program or other menu selections to expand the list of available devices to include in the project.

In the example above, Conferencing is expanded and UC Engine has been selected from the list of Inputs. The selection can be added to the Included In Project section using one of the three methods:

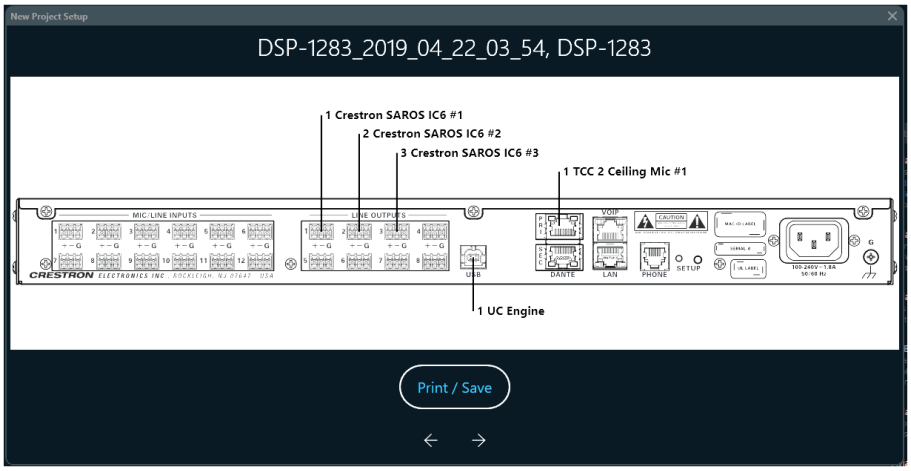
- double-click the selection
- drag-and-drop the available selection
- click the selection and then click the mid-window arrow.

Once added to the project, the UC Engine appears in the bottom right section for USB and Phone I/O. To remove the device, select it and then click the trash can icon. When selecting multiple analog Input/ Output devices, using drag and drop they can be reordered within the column. Right-click the device included in the project to enter your unique label (recommended) or keep the defaults. Once all devices and I/O are entered, click the right arrow to enter the drawing/connectivity menu.

Device Connectivity

An exciting feature of the Guided Project is the drawing/connectivity menu. Every input, codec, output and ports used to connect the device is listed on this handy reference. Click the Print / Save button to save the drawing as a PDF document or make a printed copy to save with your other "as built" project documents.

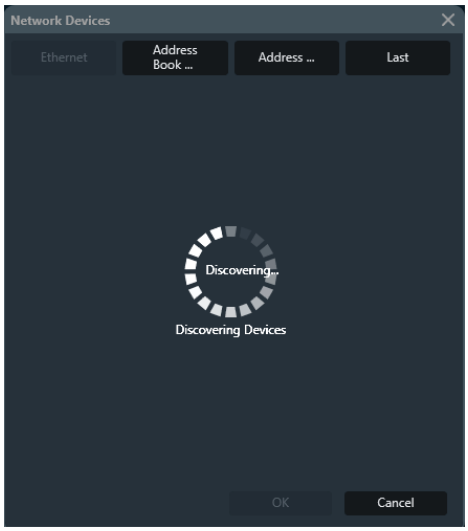
To edit the active project, click the left arrow to step back through the Guided Project menus. To advance, click the right arrow.



Select the Project Destination

Once the project is configured, select one of the following options: **Upload to Device** (to a connected device), **Save and Close** the project, or **Open In Virtual Mode** and continue working with the ability to save the project later.

When uploading the project to a connected device, the Avia network device window will open. Discovery works with LAN-connected devices or with a USB connection from a computer to the device's front panel RNDIS USB computer port.

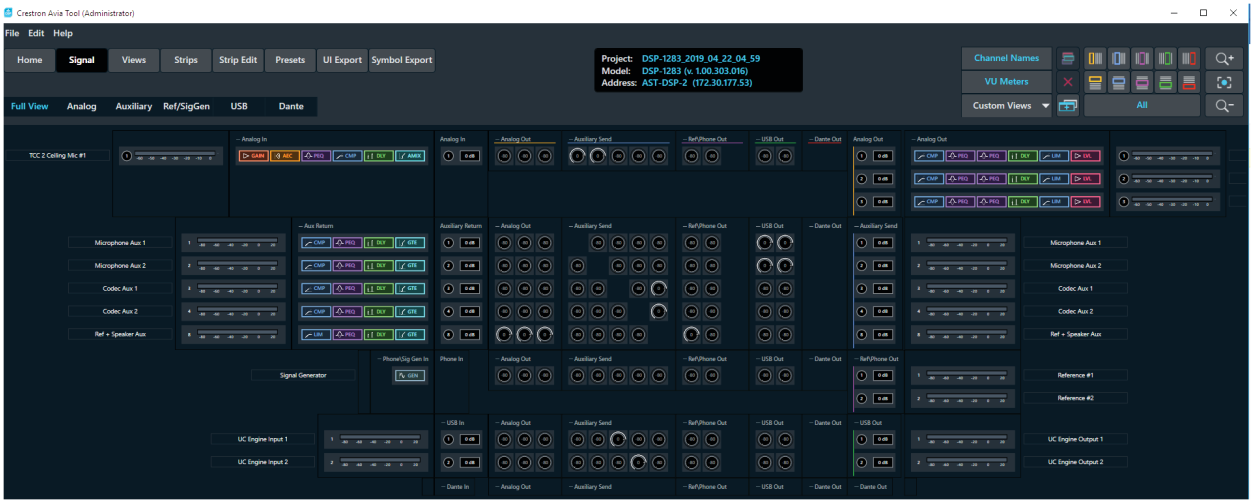


Devices can be added to the Address Book for frequent connections.

Example Project

All routings are completed by the Guided Project to achieve the connectivity as defined. In the following example:

- Using Audinate Dante Controller, the Dante ceiling microphone is assigned Channel 1 on the LAN. In the Guided Project the Dante microphone is assigned to Input 1.
- The microphone signal is sent (along with any additional mics) to Aux 1 & 2 as a mix, then sent to USB Out to the UC Engine.
- USB In from the UC Engine (the far end) is received to Aux 3 & 4.
- The USB In Audio is then sent to Aux 8, where it is mixed with the in-room conference playback audio. This routes the in-room audio out Analog 1-3 to amps and loudspeakers.
- Both the in-room playback audio and USB In audio are sent to Ref1. It is this Ref1 signal that is bused to the AECs and is used for the echo subtraction in each Input channel strip.

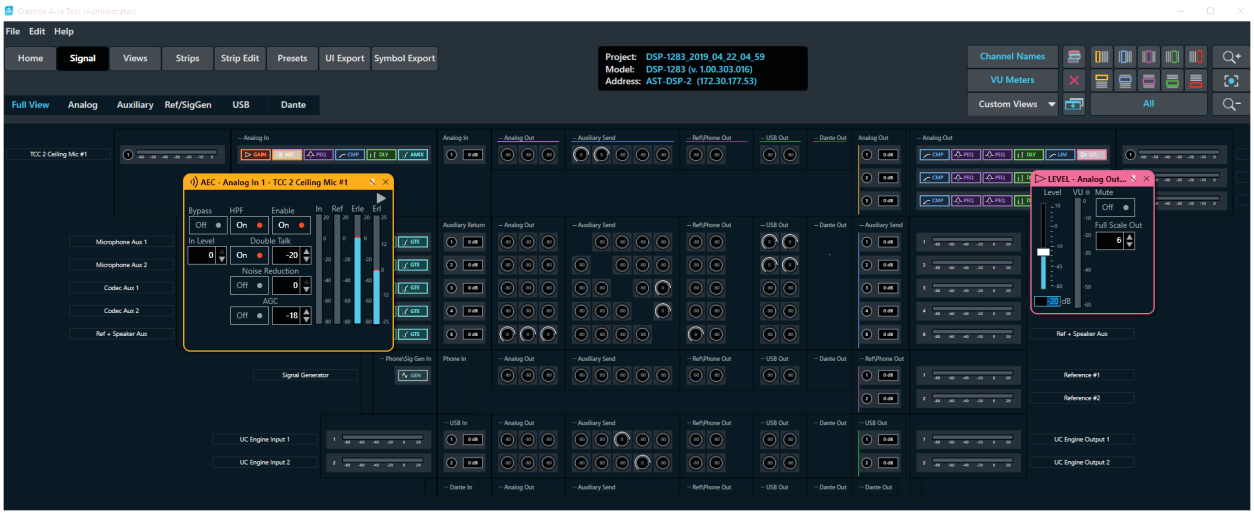


All matrix in - out trims and crosspoints are configured at 0 attenuation default. Saros and Vector loudspeaker output strips automatically add a precise EQ curve. Input microphone strips also receive the appropriate channel configuration that sets phantom power and level. These strips establish a great performance baseline that can be further adjusted to perfect - system performance in the acoustic space.

AEC Configuration Note

Each microphone configured with the Guided Project includes an AEC in the Input Channel strip. Crestron is working to add additional USB functionality with a future firmware release that will identify the DSP as an AEC Speaker Phone, disabling the AEC in the Codec. Until this USB functionality is complete, the DSP's internal AEC configuration is Bypassed, Not Enabled for all input channels.

Enable the AEC in the DSP only if you are certain the AEC in the external Codec or Call Bridge is not active. Active AEC in both the Codec and in the DSP may result in performance issues. To enable AEC in the channel strip, Bypass is Off and Enable is On.

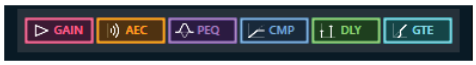


System Gain and Level adjustments are the most common sources of AEC performance issues. A quick check of the microphone Input gain and room playback Level to verify sufficient level is achieved, and the channel is not overdriven, will often resolve teleconference echo suppression issues. If the mic has low Gain, there may be insufficient level for local room pickup and playback in the far room. Before changing the mic gain, ensure all conference participants are intelligible, and to accommodate talkers at different volume levels and different locations relative to the microphone. If in-room playback levels are high or the loudspeaker is in very close proximity to the mic, reductions in output level or repositioning of the mic may be required to achieve a satisfactory call.

Channel Strip Defaults

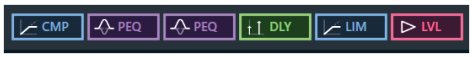
Certain assumptions are made when using the Guided Project and the application of channel strips.

Analog Input Channel Strip



Input microphone strips are unmuted. If the mic is a condenser type, the phantom power will be turned on. If it is a Dante mic, the selection will be flipped from analog input to Dante. The input strip number dictates the Dante channel receive to use on the LAN. Adding a Dante mic to the #12 DSP input strip will select Dante channel #12. Dante signals are typically dry, no processing added. Analog microphone inputs may have PEQ optionally applied. Compression and Gating will be configured although bypassed. No Delay is applied.

Analog Output Channel Strip



Output analog strips will include a compressor in bypass mode, along with two 10 band PEQs. If the strip is for a Saros or Vector loudspeaker, the first 10 bands will contain EQ parameters for the transducer. The second 10-band EQ is for use in equalizing the system for the room. If the strip is for a line level feed to a codec, both 10 band EQ's will be flat. No delay is applied. Limiters will be configured. Level is set to -20 to avoid potential in-room feedback from open mics. The Full Scale FS is set to 6.

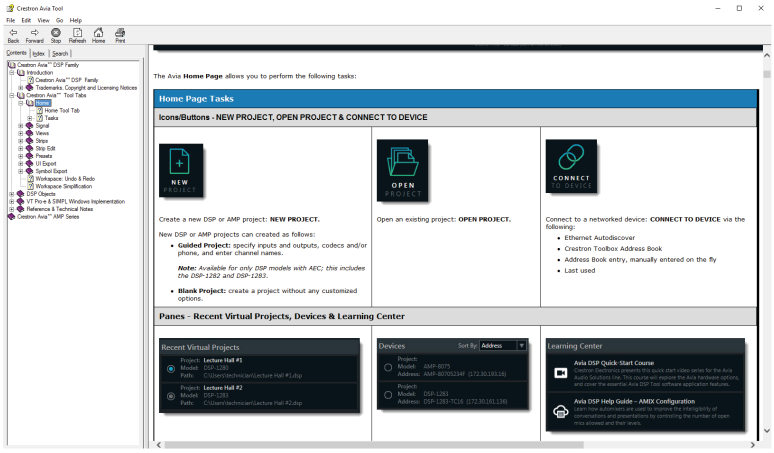
Input and Output strips applied for generic devices and external codecs will have no added signal processing applied. These devices are simply routed to the required destinations.

Project Devices

Adding devices to the project is available by a right-click in the blank area of the main window, opening the Show/Hide utility. Devices already included in the project are checked, while any new Inputs or Outputs can be selected. To adjust the design and remove a device, uncheck the box. Always save the project after any changes.

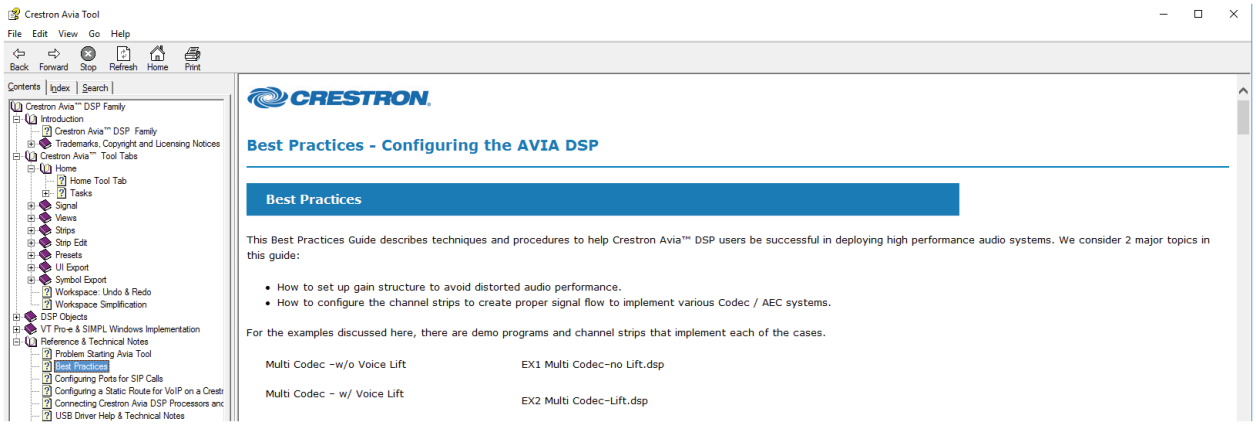
Reference & Supporting Documents

For assistance navigating the tool, press the F1 key in the Crestron Avia Audio tool to access the context-sensitive Help pages. Alternately, search the topics relative to the Guided Project under the Crestron Avia Tool Tabs > Home selection.



Best Practices

The Guided Project creates the routes and connections needed for a fully functional system. The project may be edited and devices added or removed. For additional information, consult the Best Practices section of the Help file located under the Reference & Technical Notes heading.



Future Releases

This is the first release of the Guided Project method in the Crestron Avia™ Audio Tool. Future releases will include additional microphone channel strip selections, as well as new features for presentation systems and multi-codec analog and USB teleconference systems.

Additional Information

Scan or click the QR code for detailed product information.

SW-AAT

Compliance and Legal

Original Instructions: The U.S. English version of this document is the original instructions. All other languages are a translation of the original instructions.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed at www.crestron.com/legal/patents.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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