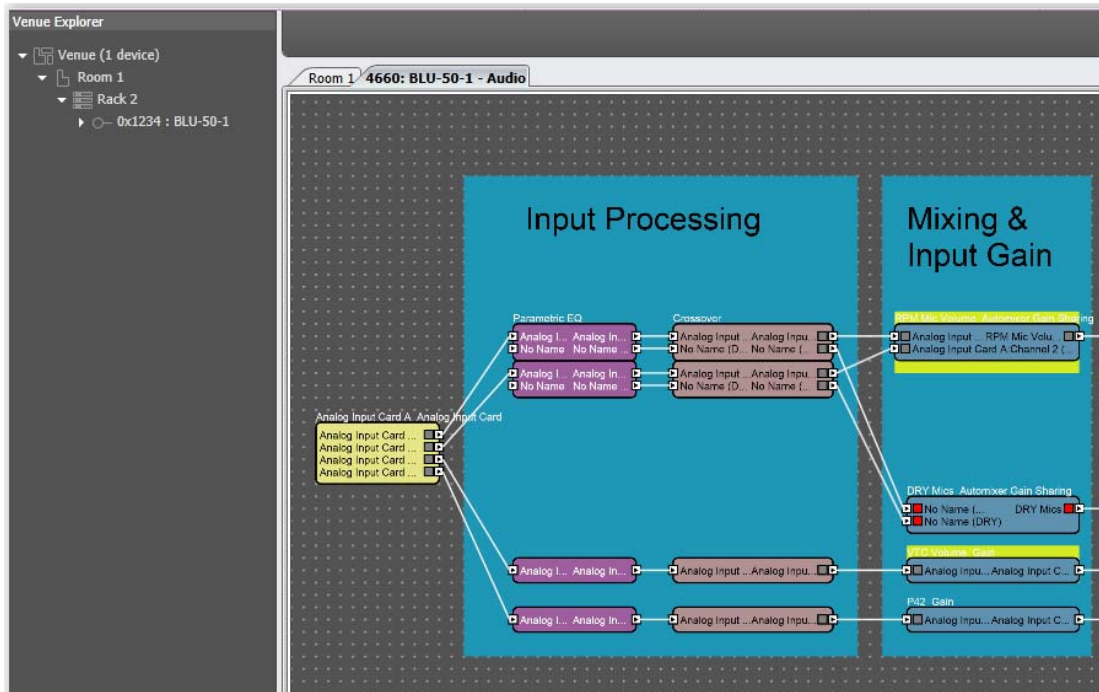




RPM DEVICE CONFIGURATION GUIDE

BSS SOUNDWEB™ LONDON BLU-50 AUDIO PROCESSOR



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Programming a BLU-50 Processor for RPM

Overview

The Soundweb™ London BLU-50 audio processor by BSS Audio is a popular choice for designers, and offers a flexible solution for a DSP microphone mixer system in RPM (FIG. 1), but it does not have a telephone interface.



FIG. 1 BSS Soundweb London BLU-50

NOTE: The BLU-50 is a registered product of BSS Audio; go to www.bssaudio.com for details.

In order to control the BLU-50 in your project via IP, it is required to enter an IP address into RPM. This address may be found using either RPMLoader or BSS NetSetter, which is a stand-alone application distributed with BSS Audio Architect. To use RPMLoader, you must first enter a "dummy" IP Address, create a project, use RPMLoader's BSS Configuration Wizard to discover the real IP address, edit this address in your RPM project, regenerate the project, and re-open with RPMLoader.

The BLU-50 requires a configuration file to be downloaded to the device. The easiest way to do this is by using the RPM Loader application. Your .rpmx project will contain a file called BLU-50 ConfigFiles.pkg. If this file is checked for download to the master, when you click Start File Transfers, the BSS Configuration Wizard will run and discover the BLU-50 devices currently on your local network. This allows you to select the correct BSS device to which you want to download the configuration file.

The Wizard will change the HiQnet ID of the selected device to the Device ID which you entered into the RPM Device page for the BSS (this is shown in the upper left corner of the Configuration Wizard page as "BSS device to configure"). Note that it is important to not have two BSS devices with the same ID within a local network. To change an ID, you will need to make the change on your RPM project ATC page and regenerate the project to get a new .rpmx file.

Once the BLU-50 configuration has been loaded, you can control whichever audio volumes you have enabled on the ATC page within the RPM application. You will need to connect the BLU-50 into your installation using the following information:

Conference Microphones: Up to two microphones may be connected to Inputs 1 & 2. The mixed output of these mics is controlled by the RPM Mic Volume control, feeding the optional VTC (Output 2) and PC (Output 3).

- **VTC:** If you are using a Video Conference unit in your project, you may connect Output 2 to your VTC Audio In. Connect your VTC Audio Line Out to the Input 3. This audio is controlled by the RPM VTC Volume control.
- **PC:** If you are using a PC for conferencing (such as Skype), connect Output 3 to the PC Line In. Connect the PC Line Out signal to the BSS Input 4. This audio volume cannot be controlled by RPM; it must be controlled on the PC.
- **Program Out:** Connect Output 1 to the amplifier for the room speaker(s). This is controlled by the RPM Main volume control.

If you wish to add any functionality to your BLU-50 configuration for your particular installation, you will need to edit the configuration within the Audio Architect PC application, and download that customized configuration file from the application. In this case, uncheck the BLU-50ConfigFiles.pkg in RPMLoader, to skip the Configuration Wizard. The latest version of this application is available to download from the BSS Audio website (FIG. 2).

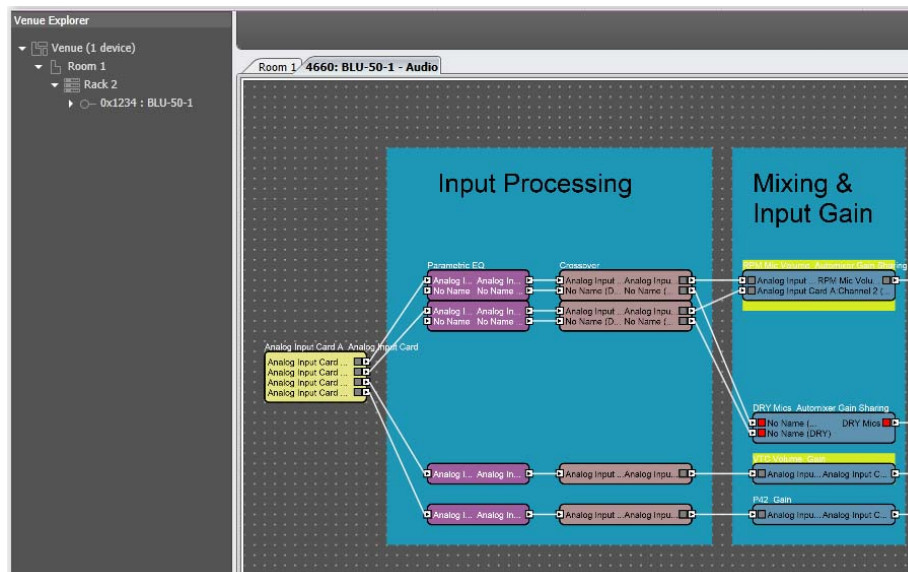


FIG. 2 Audio Architect PC Application

BLU-50 Configuration Files

The zipped sample BLU-50 configuration file (as well as this help document) is provided in RPM, via hyperlinks in the RPM Project Report:

- If you have included the BLU-50 as the ATC Mixer in your RPM Project, then the following entry is included in the project report, in the Device List - ATC/Mixer tab (FIG. 3):


Device Configuration Information		
Device	Description	Control Information
 ATC/Mixer	BSS BLU-50	IP: 10.35.95.250 NOTE: Download Required Configuration File Here Port: 1023 Device ID: 0x3210 Device Details Information

FIG. 3 RPM Project Report - Device List > ATC/Mixer (BLU-50)

Click to access the BLU-50 configuration files.

- Click the red hyperlinks to open the download link for the BLU-50 RPM Configuration file page.
- Right-click on the underlined links and select Save As to save the files to a local directory, for use by the Audio Architect configuration software application (FIG. 4):

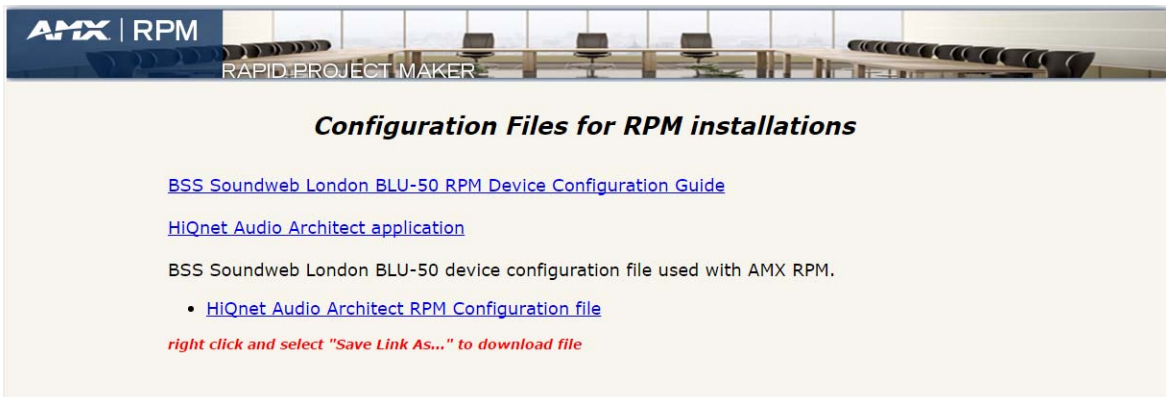


FIG. 4 RPM Project Report - Right-click to download the BLU-50 RPM Configuration files

There are two files available for download, "*Programming the BSS BLU-50 for Rapid Project Maker.pdf*" (this document) and "*BLU_50_RPM_Configuration_v1.0.0.audioarchitect*", for use by the Audio Architect application.

RPM Requirements for BSS Designs

There are only a few requirements that must be configured for this BSS design to work with the RPM project:

1. The BLU-50 device must be assigned a HiQNet Node Address in the Audio Architect application which matches the Device ID assigned on the RPM application's ATC page. This is the node address which should be saved in the configuration file, and you must make sure that this address replaces the node address in your BLU-50 device (FIG. 5) when it is programmed.
 - If requested when transferring the configuration, choose to copy the Node Address "to" the device rather than "from" the device.
 - Note that it is important to not have two BSS devices with the same ID within a local network. To change an ID, you will need to make the change on your RPM project ATC page and regenerate the project to get a new file.

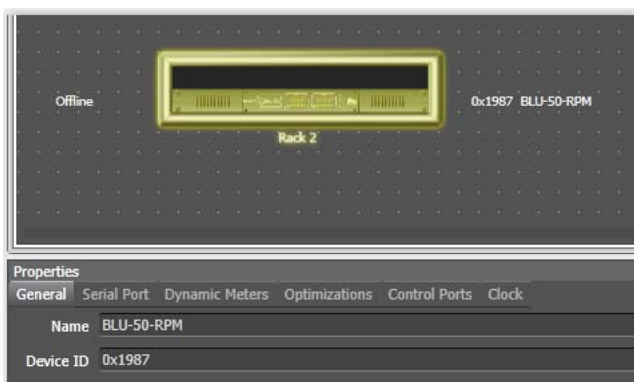


FIG. 5 BSS Audio Architect software application - Main Properties (Example Node Address = 0x1987)

2. To control the device, it is necessary to reference each control block within the device by using the HiQNet Address of that block. If using your own custom built design file, the HiQNet Address of all processing objects used by RPM must be set to match the values in the BLU_50_RPM_Configuration file, and the HiQNet node address of the device must match the Device ID set in the RPM design application for the BLU-50.

These addresses are programmed into the RPM Duet module for this device, so the exact same control block must be programmed into the BLU-50 used for RPM, by using the configuration file provided.

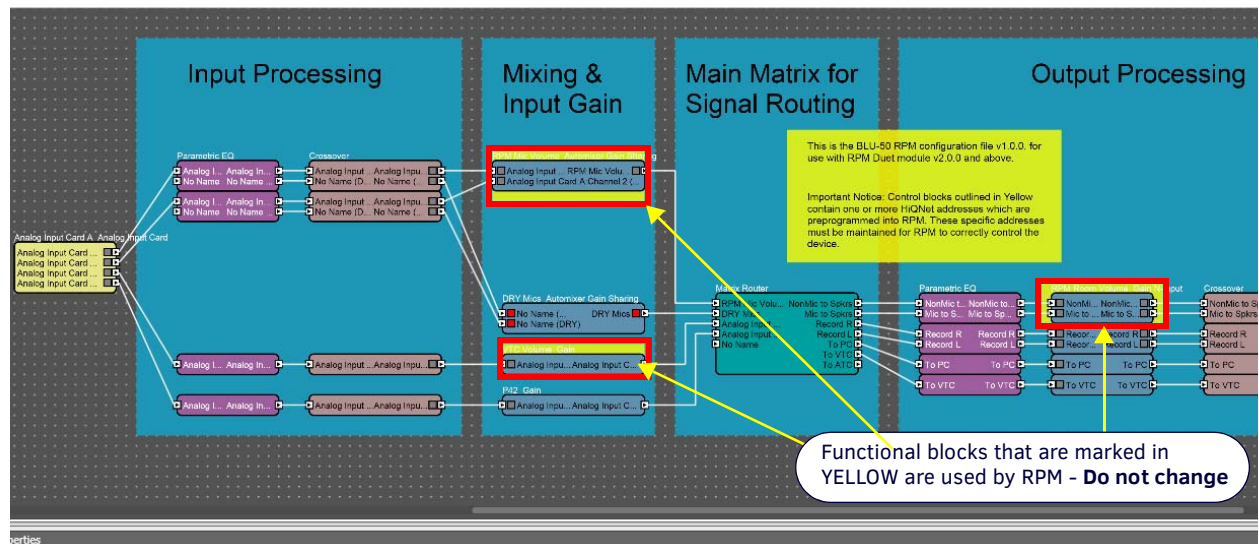


FIG. 6 Audio Architect software application - RPM control points marked with yellow

3. There are three BLU-50 control points supported by RPM (see a-c below). These are already defined in the sample "BLU_50_RPM_Configuration.architect" file, and you may use it as supplied without any further programming. The blocks are outlined in yellow on the "default config" page in Audio Architect.
 - a. RPM Output Volume: Non-Mic to Spkr Input 1 Gain - This controls the final output volume going to Output 1 of the BLU102, which consists of all audio mixed within the device. You need this point if you have chosen "Control Volume via ATC/ Mixer" on the A/V Switcher Configuration page in RPM.
 - b. RPM Mic Volume: Mics Output Gain - This controls the mixed microphone signal going to the VTC and PC Outputs. You need this point if you have selected "Control Microphone Volume: ATC/Mixer 1" on the ATC Configuration page in RPM.
 - c. RPM VTC Volume: VTC Gain Mono block- This controls the signal coming from the Video Conferencer audio, if it is fed into the mixer. You need this point if you have selected "Control VTC Volume: ATC/Mixer 1" on the ATC Configuration page in RPM.
4. The Matrix Mixer of the BSS RPM Configuration file has been set up for a typical conference room that supports microphone mixing to a video conference or a PC destination (such as Skype or Lync conferencing).
 - After the RPM Mic Fader control point, the signal is fed to two outputs, To PC, and To VTC.
 - Return audio from the VTC and PC are mixed into the RPM Out signal To Room Speakers. Note that the BLU-50 does not do Echo Cancellation, which must be done by the VTC or PC systems.

System Implementation

The following Block Diagram (FIG. 7) shows the signal connections to use to work with the RPM project, and the three NetLinX levels used to control them:

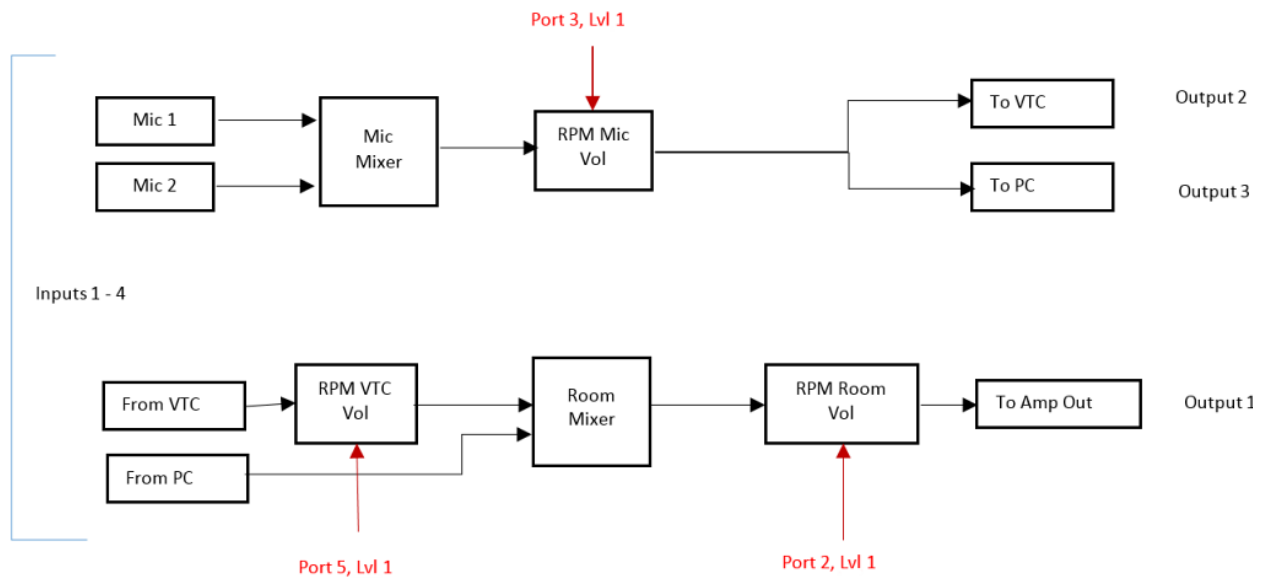


FIG. 7 System Implementation



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Last Revised:
1/15/2015