3RD PARTY CONTROLS

XILICA CUSTOM CONTROL MODULE FOR MEZZO V.1.0

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This document is intended to assist the user in deploying the Xilica Custom Control Module for Mezzo v.1.0. The module is designed to control; gain, mute, delay, and polarity for the Mezzo User EQ section. The module also monitors the amplifier's Global Alarms and Mains Voltage. Volts RMS and Gain Reduction are displayed as meter data for each output.

Requirements

There are a few requirements to run the module and control a Powersoft Mezzo:

- Powersoft Mezzo Amplifier, Model: 322 A, 322 AD, 324 A, 324 AD, 602 A, 602 AD, 604 A, 604 AD, with v.1.3 or later firmware.
- Xilica DSP Processor
- Powersoft Armonía Plus v.1.4 or later.

Preparation

In preparation for the use of the control module, the user needs to set, or discover the IP address on the amplifier. Mezzo by default is set to receive an IP address from a DHCP server. If there is no DHCP server on the network, the Mezzo will default to Link Local IP address within the IP subnet: 169.254.X.Y, where X and Y are variable and unique to each unit.

Following are the steps to connect to the Mezzo and read it is IP address:

1. Connect the Mezzo and the PC to the same network.
2. If there is no DHCP server available, set the PC Network Interface Card (NIC) to an address within the subnet 169.254.X.Y, otherwise, skip to the next step.
3. Open Armonía Plus software and hit "Match", then "Discovery." The Mezzo should appear under the list of amplifiers discovered on the network. By hovering the mouse over an amplifier its current IP address will be displayed.

Following are the steps to set the Mezzo IP address to Static:

1. Click on and drag the Mezzo from the Discovery column into the Workspace.
2. Click on "Config" and select the Mezzo to be configured in the Workspace.
3. Under "Select Mode" choose "DHCP" if a DHCP Server is present on the network and the Mezzo is due to have a dynamic address, or "Static" to assign a static IP address to the Mezzo. The IP address must be a member of the subnet the QSYS core is operating within.
4. Click "Apply" and close Armonía Plus.

Installation

The control module will come as an .xml file.

1. Once the control module is downloaded, deposit the file *Powersoft Mezzo v.1.0.xml* into the desired file location.
2. Open Xilica Designer and navigate to the *Lua Device Driver Builder* within Xilica Designer.
3. Within the Builder choose Import Custom Driver and navigate to the file location where the Powersoft Mezzo v.1.0.xml was stored.

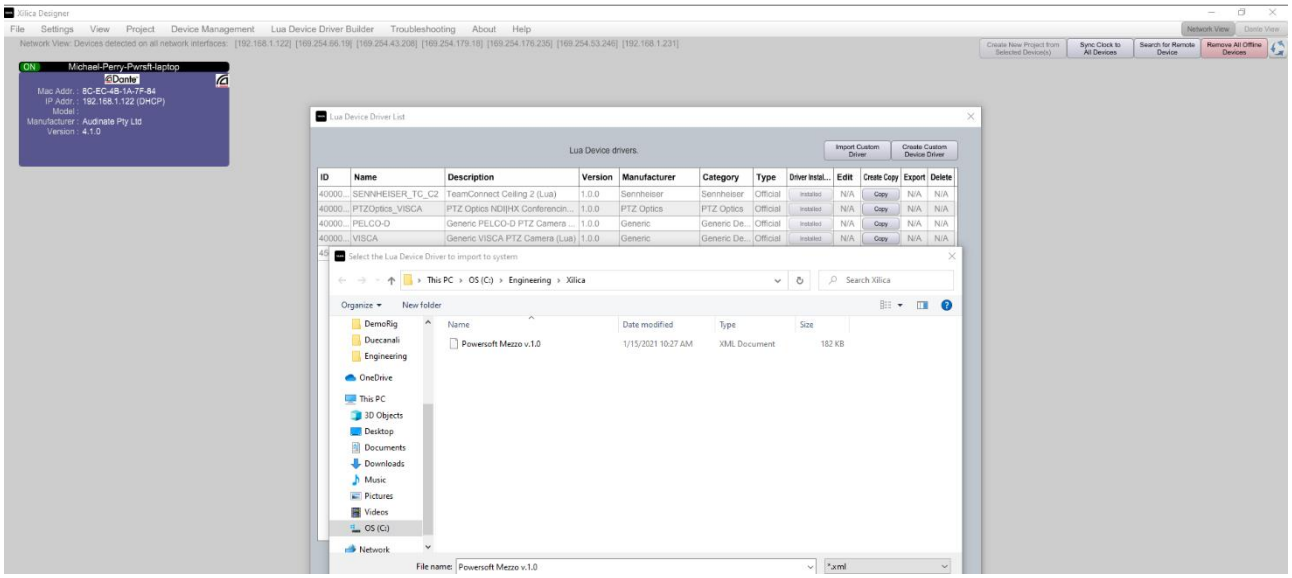

Figure 1 – Screenshot of Lua Device Driver Builder in Xilica Designer.

Getting Started

Following are the steps to get started with the control module:

1. Open Xilica Designer and start a New Project.
2. Select the Project Type; Solaro, or Neutrino/Uno/Rio Series.
3. Once the project opens in the Component Library on the left the user will find Powersoft Mezzo (Figure 2).
4. When loading the design to a device, enter a local UDP Port between 1024 and 49151. If controlling multiple Mezzo, each instance of the control module must have a different local UDP Port.
5. Enter the IP Address of the Mezzo you wish to control into the text field (Figure 3).
6. Click on the *Link* button to begin the initial amp settings read process and to begin the polling scheme (Figure 4).

Important Note:

Once a valid IP Address is entered and the module is deployed, the user is controlling the Mezzo. The Link button only begins the read and polling sequence. It does not block control when un-selected.

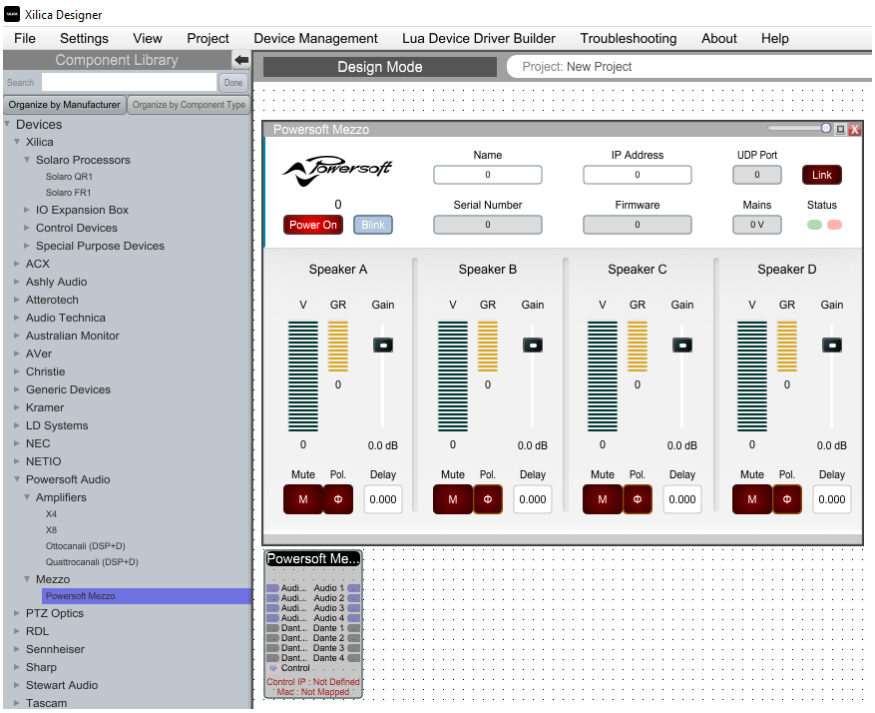

Figure 2 – Screenshot of Xilica Designer's Component Library and the Mezzo Module.

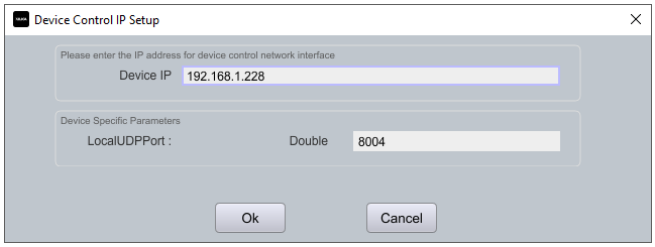

Figure 3 – Screenshot of Control IP Setup in Xilica Designer.

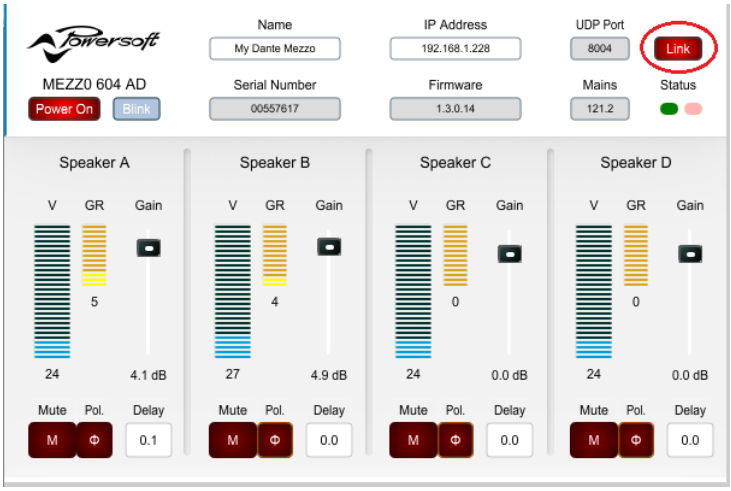

Figure 4 – Screenshot of module Link button.

Features

Following are a list of the control module features:

- In the top left corner of the control module's User Interface the *Model* of the Mezzo amplifier is listed. The model is updated when the user clicks the *Link* button, and the module begins reading from the amplifier.

- The Power button is used to manually put the Mezzo into Power-On, or Standby Mode. Automatically, the Mezzo will power on when AC power is applied to it and stays on until audio drops below -60dBFS in the input section for more than (25) minutes.

Important Note:
If the application requires it, the integrator can disable AutoStandby for the Mezzo in Armonía Plus Software on the Tools/Options tab.

- The momentary *Blink* button will engage the (10) second LED Blink sequence. The *Blink* function can help to verify communication and identify the Mezzo.

- The *Name* text field is for the Nickname that will live on the amplifier. This user can change the Nickname on the Mezzo by entering text into this field.

- The read only text field *IP Address* lists the IP Address of the Mezzo that the user wishes to control which was entered upon deployment.
    - The IP address must be a 32-bit numeric IPv4 address written as (4) numbers separated by periods.

- The read only text field *Local UDP Port* lists the UDP Port of the module and which was entered upon deployment.
    - The acceptable range for the *Local UDP Port* is from 1024 to 49151
    - The module transmits to the Mezzo on UDP Port 8002. This is set statically within the Application Programming Interface (API). The *Local UDP Port* is used to distinguish the module from other instances that are running within the Xilica design when receiving solicited messages from Mezzo.
    - When controlling multiple Mezzo amps with multiple instances of the module, each instance must have a unique *Local UDP Port* number.

- The read only field *Mains(V)* will display the Mains AC voltage applied to the Mezzo.

- The *Link* button behaves according to toggle logic. Once the *Link* button is pressed, the module reads all settings and information from the Mezzo and begins the polling sequence.

- The **green** *Status LED* is a virtual LED that indicates the Mezzo is linked with the module.

- The red *Status LED* is a virtual LED that when lit, indicates the Mezzo is in an alarm state.

- There are fault warnings associated with a lit **red** LED for the following conditions: Temperature Fault, Fan Fault, and Voltage Fault. If the user witnesses a **red** LED color go to *Armonía Plus* and look to the *Health Plus* to find the alarm issue and investigate corrective action.

- *Serial Number* is a read-only field showing data read from Mezzo. Listed is the hardware serial number on the Mezzo. It is read each time the user clicks the *Link* button.

- *Firmware* is a read-only field showing data read from Mezzo. Listed is the firmware version that lives on the amplifier. It is read each time the user clicks the *Link* button.

- The Audio Control Section controls the *User EQ* section of the amplifier (found in Armonía +) and is made up of the following controls (Figure 5):
  - *Volts RMS* – Demonstrates the Volts RMS for the output channel.
  - *Gain Reduction* – Demonstrates the Gain Reduction that is applied to the output channel.
  - *Gain* – The gain for the output. It ranges from -60dBu to +15dBu.
  - *Polarity Invert* – A toggle button which will invert the polarity of the output channel.
  - Mute – The Mute button for the output channel.
  - Delay – The amount of delay applied to the output channel. The output delay range is from 0.0ms to 100.0ms with refinement to 1/100ms.

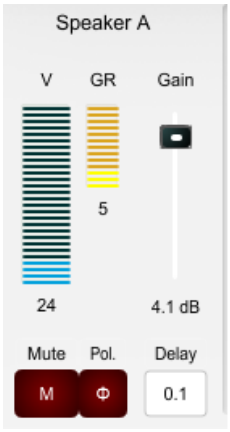

Figure 5 – Screenshot of Audio Control Section.

Final Comments

To ensure the accuracy of Read/Write control the user must be sure to enter a separate Local UDP Port for each instance of the module.