

# Crestron® control implemented on the Williams Sound PLA DL201NET Loop Amplifier

## WHITE PAPER

### General Description

Williams Sound has implemented Crestron control on our PLA DL210NET Loop Amplifier by creating a Williams Sound Crestron loop amplifier software module within the Crestron environment. This module is available and free to Crestron-certified technicians who have the ability to download software from Crestron's dealer support portal.

The Crestron module is a subset of code within the Crestron environment that gives an integrator the ability to implement control and feedback of the PLA DL210NET loop amplifier from a Crestron touchpanel or a computer.

The Crestron module is typically a subset of code in a larger program file. For example, a venue may have sub-systems that require control, such as an audio system, a projector or flat screen display, lighting system, and media sources. When the loop amplifier control is added, it becomes another subsystem of this larger control program.

Both the PLA DL210NET and PLA DL210NET-D amplifiers support Crestron control – **with** firmware version 1.145 minimum installed in the amplifier. If someone has purchased an amplifier with older firmware in it, they must upgrade the firmware to at least 1.145. The latest firmware version, along with the compatible version of the PC App, is bundled into one download on our website [www.williamssound.com](http://www.williamssound.com) under Support - Downloads - Software - (then select the firmware for the loop amplifier model you have).

### How it works

Within the Crestron environment, two basic files are created:

1. A graphics file that gets downloaded to a touchpanel (called a VTProE file) or a computer (called an XPanel file). This graphics file contains button, page flips and button designators called "joins". This is just a graphics file only, it will do nothing without #2 below.
2. A program file (called SIMPL Windows file) that gets loaded into a Crestron processor. This program takes button pushes (joins) from a touchpanel (or computer) (these joins are defined in the VTProE file) and sends assigned commands to the loop amp, and takes status feedback from the amplifier to be displayed on a touchpanel (or computer) button (also via button joins).

To control a subsystem such as the loop amplifier from a **touchpanel**, a VTProE file is required, and is loaded into the *touchpanel*. To control a subsystem from a **computer**, the VTProE file is used to create an XPanel file, which can be loaded onto a *computer*. The devices do not automatically begin talking to each other, some configuration is necessary to get the loop amplifier talking to the Crestron processor and touchpanel or computer.

Note that the graphics can be drawn or "themed" differently – size, color, style, and how many buttons are provided are all up to the integrator. A customer's touchpanel would most likely NOT look like the example graphics in this white paper, even though the functions may be the same.

Basically, to control a Williams Sound loop amplifier (and get status feedback) you need:

1. A Williams Sound loop amplifier connected to a loop(s)
2. The most current firmware version for the amplifier installed on the amplifier
3. A Crestron Control processor (with SIMPL program file loaded)
4. A Crestron Touchpanel with VTProE graphics file loaded – and/or – a computer with the XPanel file loaded
5. An ethernet network configured to support these devices

The Williams Sound loop amplifier can only be connected to **one** control system at a time. So, if the amplifier is being controlled with the PC App, Crestron cannot control it, and vice-versa. The same is true with the iOS app. Both of these would typically be used for commissioning the system, and when the system has been commissioned, control can be returned to the end-user through the Crestron system. However - a command has been provided in the module that allows the Crestron System to disconnect/reconnect in order to allow other methods of control to connect (PC App, iOS app).

The Crestron module is available for download on Crestron's website - by Crestron-certified installers with access to Crestron's dealer support area. The Crestron Module is included in the download along with a sample graphics file and program file so that an integrator can load the files and get a system running quickly with a loop amplifier, to see how the functions work.

Note: You must be a Crestron Authorized Dealer or Crestron Certified Integrator with access to Crestron's Dealer Support area to download, view, and implement the module.

## Functions provided in the module

### Control:

1. Digital L (Switchable AES/EBU or Dante) Input: Vol+, Vol-, Mute
2. Digital R (Switchable AES/EBU or Dante) Input: Vol+, Vol-, Mute
3. Mic/Line Input 1 (Phoenix): Vol+, Vol-, Mute
4. Mic/Line Input 2 (Phoenix): Vol+, Vol-, Mute
5. Line Input 1 (RCA): Vol+, Vol-, Mute
6. Line Input 2 (RCA): Vol+, Vol-, Mute
7. 70-100v Input: Vol+, Vol-, Mute
8. Loop Test Initiate
9. User Presets 1-4 (Recall only, no save)
10. Get Status Initiate
11. Communication Connect/Disconnect

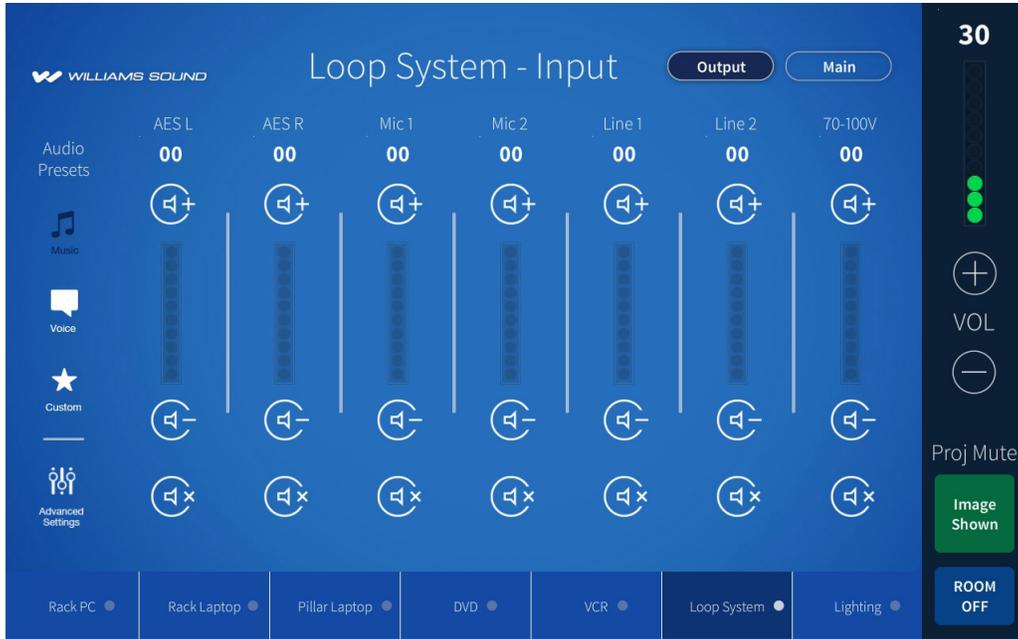
### Status:

1. Digital (AES/EBU or Dante) Input L,R VU Meters
2. Mic/Line Input (Phoenix) L,R VU Meters
3. Line Input (RCA) L,R VU Meters
4. 70-100v Input VU Meter
5. Loop Output Calibrated VU Meters
6. Loop Test Results (OK, Open, Testing in Progress)
7. Shutdown Fault (Overcurrent, Clipping, Temperature)
8. Amp 1 Temp
9. Amp 2 Temp
10. System (Processor) Temp
11. Immediate Status Update (initiated by Control #10, above)
12. Connected/Disconnected Status (initiated by Control #11, above)

(Note: Statuses #1-10, above, are automatically returned periodically. Control #10 "Get Status Initiate" is a manual request to update status once, immediately)

### Sample Graphics provided in the module

Basic Commands page



Advanced Commands and Feedback page

