

Volume ramping in the XAP products

Description

Volume ramping allows you to smoothly increase and decrease the gain on an input, output or processing channel or channels. This document describes how to set up single and multi-channel volume ramping for your XAP products.

Volume Ramping Options

XAP products can be configured using G Ware to support volume ramping on a single channel or on multiple channels simultaneously when using the RS-485 port or the GPIO port A control pins. Ramp commands can also be sent via RS-232 using a custom control system as well. Ramping can be applied to any input, output or processing channel and telephone transmit and receive.

Ramp Commands

There are three distinct ramp commands: one for volume up, one for volume down and one for stop.

Command	Example	Description
Ramp Up	#50 RAMP 12 O 3 20	This command will ramp up, from the current gain setting, on Output 12 at a rate of 3 dB per second until a target of 20 dB is reached.
Ramp Down	#50 RAMP 12 O -3 -20	This command will ramp down, from the current gain setting, on Output 12 at a rate of 3 dB down per second until a target of -20 dB is reached.
Ramp Stop	#50 RAMP 12 O 0	This command, with the rate of 0, will stop the ramp up or ramp down on Output 12. The ramp stop command can be issued any time to stop the ramp up or down before the target is reached.

Single-channel volume ramping

Using the Remote Builder in G-Ware, you can program the volume up and down buttons on the XAP IR Remote or the Volume Control panel to ramp levels up and down when the user pushes and holds the button.

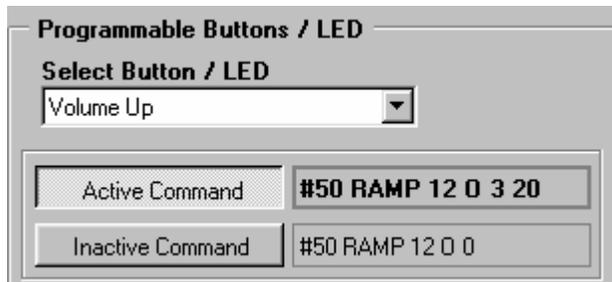


Figure 1. Programming Volume Up button



Figure 2. Programming Volume Down button

There are three command strings needed to complete the programming. One is for volume up, one for volume down and one for the channel to stop ramping on button release.

In Figure 1, the volume up button is selected and the active command is #50 RAMP (command) 12 (channel) O (group) 3 (dB per second) 20 (target).

The Volume Down command is the same in structure as the Volume Up command except that the rate will have a negative value and the target will have a negative value. Assign the Ramp Stop command to Inactive Command.

Multi-channel volume ramping

In applications where multiple channels need to ramp simultaneously (such as stereo audio), the programming will be different than in a single channel system. The same command strings are used for volume control, however, they are programmed using the Macro Editor in G-Ware. This allows you to write the multiple command strings in one macro and then program the remote control to call the macro with the proper command strings in it.



Figure 1. Programming Volume Up button Figure 2. Programming Volume Down button

With a multi-channel ramp command each macro will contain two lines. Macro 1 will have the commands #50 RAMP 11 O 3 20 and #50 RAMP 12 O 3 20. Macro 2 will have commands #50 RAMP 11 O -3 -20 and #50 RAMP 12 O -3 -20. Macro 3 will have commands #50 RAMP 11 O 0 and #50 RAMP 12 O 0.

Ramp Commands via RS-232

When using a custom control system the ramp commands are sent directly to the RS-232 port on the XAP system. The command strings are the same as the ones used for RS-485 control the difference being that the commands are issued from the control system.

Serial Command Responses

The XAP system will echo a response to the ramp command then as the ramp executes the GAIN value will be sent from the unit. The GAIN responses will be based on the channel group that is being controlled. For example, if the command #50 RAMP 1 I 3 20 is sent the XAP will echo the command and then send the response #50 GAIN 1 M 3.00 A as the gain changes so will the dB value sent by the XAP. If the control is on a line input and the command #50 RAMP 5 I 3 20 is sent the XAP will echo the command and then send the response #50 GAIN 5 L 3.00 A. This gain value can then be used by the custom control system to track the levels changes or the Volume panel to light its LEDs for visual feed back.

Below is a breakdown of channel commands and responses based on unit type and the channel involved.

<u>Ramp Channel</u>	<u>XAP 400 Gain Response</u>	<u>XAP 800/PSR1212 Gain Response</u>
M	M	M
L	L	M
I	Channels 1-4 M Channels 5-8 L	Channels 1-8 M Channels 9-12 L
O	O	O
P	P	P