



Using a Third-Party Control System

The microphone can send an external logic control signal to any networked devices that receive logic signals through an Ethernet connection. This allows the microphone mute switch to mute a DSP audio signal, instead of (or in addition to) muting the microphone at the source. The microphone also receives logic commands over the network. Many parameters controlled through the web application can be controlled through a third party control system, using the appropriate command string.

Common applications:

- Mute
- LED color and behavior
- Loading presets
- Adjusting levels

A complete list of command strings is available in the device help or from www.shure.com.

To send a logic signal out when the mute button is pressed:

1. In the web application, select Configuration > Button Control.
2. Under the Button Properties menu, change the Mute Control Function setting to Logic out.

MXA310 Microflex[®]Advance[™] Command Strings

This document can also be found at: http://shure.custhelp.com/app/answers/detail/a_id/6059

The device is connected via Ethernet to a control system, such as AMX, Crestron or Extron.

Connection: Ethernet (TCP/IP; select "Client" in the AMX/Crestron program)
Port: 2202

Conventions

The device has 4 types of strings:

GET

Finds the status of a parameter. After the AMX/Crestron sends a GET command, the MXA310 responds with a REPORT string

SET

Changes the status of a parameter. After the AMX/Crestron sends a SET command, the MXA310 will respond with a REPORT string to indicate the new value of the parameter.

REP

When the MXA310 receives a GET or SET command, it will reply with a REPORT command to indicate the status of the parameter. REPORT is also sent by the MXA310 when a parameter is changed on the MXA310 or through the GUI.

SAMPLE

Used for metering audio levels.

All messages sent and received are ASCII. Note that the level indicators and gain indicators are also in ASCII

Most parameters will send a REPORT command when they change. Thus, it is not necessary to constantly query parameters. The MXA310 will send a REPORT command when any of these parameters change.

The character "x" in all of the following strings represents the channel of the MXA310 and can be ASCII numbers 0 through 5 as in the following table.

0	All channels
1 through 4	Individual channels
5	Automix output

Command Strings (Common)

Get All	
Command String: < GET x ALL >	Where x is ASCII channel number: 0 through 5. Use this command on first power on to update the status of all parameters.
MXA310 Response: < REP ... >	The MXA310 responds with individual Report strings for all parameters.

Get Channel Name		
Command String:	< GET x CHAN_NAME >	Where x is ASCII channel number: 0 through 5.
MXA310 Response:	< REP x CHAN_NAME {YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY} >	Where YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY is 31 characters of the user name. The MXA310 always responds with a 31 character name.
Get Device ID		
Command String:	< GET DEVICE_ID >	The Device ID command does not contain the x channel character, as it is for the entire device.
MXA310 Response:	< REP DEVICE_ID {YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY} >	Where YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY is 31 characters of the device ID. The microphone always responds with a 31 character device ID.
Get Audio Gain		
Command String:	< GET x AUDIO_GAIN_HI_RES >	Where x is ASCII channel number: 1 through 5. Channel number 0 (all channels) is not valid for this command.
MXA310 Response:	< REP x AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400. yyyy is in steps of one-tenth of a dB.
Set Audio Gain		
Command String:	< SET x AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400. yyyy is in steps of one-tenth of a dB.
MXA310 Response:	< REP x AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Increase Audio Gain by n dB		
Command String:	< SET x AUDIO_GAIN_HI_RES INC nn >	Where nn is the amount in one-tenth of a dB to increase the gain. nn can be single digit (n), double digit (nn), triple digit (nnn).
MXA310 Response:	< REP x AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Decrease Audio Gain by n dB		
Command String:	< SET x AUDIO_GAIN_HI_RES DEC nn >	Where nn is the amount in one-tenth of a dB to decrease the gain. nn can be single digit (n), double digit (nn), triple digit (nnn).
MXA310 Response:	< REP x AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Get Channel Audio Mute		
Command String:	< GET x AUDIO_MUTE >	Where x is ASCII channel number: 0 through 5. See table on page 1. Channel Audio Mute is pre-meter.
MXA310 Response:	< REP x AUDIO_MUTE ON > < REP x AUDIO_MUTE OFF >	The MXA310 will respond with one of these strings.
Mute Channel Audio		
Command String:	< SET x AUDIO_MUTE ON >	
MXA310 Response:	< REP x AUDIO_MUTE ON >	
Unmute Channel Audio		
Command String:	< SET x AUDIO_MUTE OFF >	
MXA310 Response:	< REP x AUDIO_MUTE OFF >	
Toggle Channel Audio Mute		
Command String:	< SET x AUDIO_MUTE TOGGLE >	
MXA310 Response:	< REP x AUDIO_MUTE ON > < REP x AUDIO_MUTE OFF >	The MXA310 will respond with one of these strings.
Get Device Audio Mute		
Command String:	< GET DEVICE_AUDIO_MUTE >	Device Audio Mute is equivalent to the physical mute button on the mic. Device Audio Mute is post-meter.
MXA310 Response:	< REP DEVICE_AUDIO_MUTE ON > < REP DEVICE_AUDIO_MUTE OFF >	The MXA310 will respond with one of these strings.

Mute Device Audio		
Command String:	< SET DEVICE_AUDIO_MUTE ON >	
MXA310 Response:	< REP DEVICE_AUDIO_MUTE ON >	
Unmute Device Audio		
Command String:	< SET DEVICE_AUDIO_MUTE OFF >	
MXA310 Response:	< REP DEVICE_AUDIO_MUTE OFF >	
Toggle Device Audio Mute		
Command String:	< SET DEVICE_AUDIO_MUTE TOGGLE >	
MXA310 Response:	< REP DEVICE_AUDIO_MUTE ON > < REP DEVICE_AUDIO_MUTE OFF >	The MXA310 will respond with one of these strings.
Get Output Clip Status		
Command String:	< GET x AUDIO_OUT_CLIP_INDICATOR >	Where x is ASCII channel number: 1 through 5. See table on page 1. It is not necessary to continually send this command. The microphone will send a REPORT message whenever the status changes.
MXA310 Response:	< REP x AUDIO_OUT_CLIP_INDICATOR ON > < REP x AUDIO_OUT_CLIP_INDICATOR OFF >	The MXA310 will respond with one of these strings.
Flash Lights on Microphone		
Command String:	< SET FLASH ON > < SET FLASH OFF >	Send one of these commands to the MXA310. The flash automatically turns off after 30 seconds.
MXA310 Response:	< REP FLASH ON > < REP FLASH OFF >	The MXA310 will respond with one of these strings.
Turn Metering On		
Command String:	< SET METER_RATE sssss >	Where sssss is the metering speed in milliseconds. Setting sssss=0 turns metering off. Minimum setting is 100 milliseconds. Metering is off by default.
MXA310 Response:	< REP METER_RATE sssss > < SAMPLE aaa bbb ccc ddd eee >	Where aaa, bbb, etc is the value of the audio level received and is 000-060. aaa = output 1 bbb = output 2 ccc = output 3 ddd = output 4 eee = output 5
Stop Metering		
Command String:	< SET METER_RATE 0 >	A value of 00000 is also acceptable.
MXA310 Response:	< REP METER_RATE 00000 >	
Get Audio Peak Level		
Command String:	< GET x AUDIO_IN_PEAK_LVL >	
MXA310 Response:	< REP x AUDIO_IN_PEAK_LVL nn >	Where nn is the audio level and is 00-60.
Get Audio RMS Level		
Command String:	< GET x AUDIO_IN_RMS_LVL >	
MXA310 Response:	< REP x AUDIO_IN_RMS_LVL nn >	Where nn is the audio level and is 00-60.
Get Preset		
Command String:	< GET PRESET >	
MXA310 Response:	< REP PRESET nn >	Where nn is the preset number 01-10.

Set Preset	
Command String: < SET PRESET nn >	Where nn is the preset number 1-10. (Leading zero is optional when using the SET command).
MXA310 Response: < REP PRESET nn >	Where nn is the preset number 01-10.
Get Preset Name	
Command String: < GET PRESET1 > < GET PRESET2 > < GET PRESET3> etc	Send one of these commands to the MXA310.
MXA310 Response: < REP PRESET1 {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} > < REP PRESET2 {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} > < REP PRESET3 {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} > etc	Whereyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy is 25 characters of the device ID. The MXA310 always responds with a 25 character device ID
Get Gate Out Status	
Command String: < GET x AUTOMIX_GATE_OUT_EXT_SIG >	Where x is ASCII channel number: 0 through 4. It is not necessary to continually send this command. The MXA310 will send a REPORT message whenever the status changes.
MXA310 Response: < REP x AUTOMIX_GATE_OUT_EXT_SIG ON > < REP x AUTOMIX_GATE_OUT_EXT_SIG OFF >	The MXA310 will respond with one of these strings.
External Switch Out	
Command String: < GET EXT_SWITCH_OUT_STATE >	It is not necessary to continually send this command. The MXA310 will send a REPORT message whenever the status changes.
MXA310 Response: < REP EXT_SWITCH_OUT_STATE ON > < REP EXT_SWITCH_OUT_STATE OFF >	The MXA310 will respond with one of these strings.
Mute Button Status	
Command String: < GET MUTE_BUTTON_STATUS >	It is not necessary to continually send this command. The MXA310 will send a REPORT message whenever the status changes.
MXA310 Response: < REP MUTE_BUTTON_STATUS ON > < REP MUTE_BUTTON_STATUS OFF >	The MXA310 will respond with one of these strings.
Mute Button LED State	
Command String: < GET MUTE_BUTTON_LED_STATE >	
MXA310 Response: < REP MUTE_BUTTON_LED_STATE ON > < REP MUTE_BUTTON_LED_STATE OFF >	The MXA310 will respond with one of these strings.
Get Ring LED State (Use when GUI Lighting Style is set to RING)	
Command String: < GET DEV_LED_IN_STATE >	This command is only available when both "Mute Control Function" is set to "Logic Out" or "Disabled" AND Light Ring "Lighting Style" is set to "Ring" in the GUI.
MXA310 Response: < REP DEV_LED_IN_STATE ON > < REP DEV_LED_IN_STATE OFF >	The MXA310 will respond with one of these strings.
Set Ring LED State (Use when GUI Lighting Style is set to RING)	
Command String: < SET DEV_LED_IN_STATE ON > < SET DEV_LED_IN_STATE OFF >	Send one of these commands to the MXA310. This command is only available when both "Mute Control Function" is set to "Logic Out" or "Disabled" AND Light Ring "Lighting Style" is set to "Ring" in the GUI.
MXA310 Response: < REP DEV_LED_IN_STATE ON > < REP DEV_LED_IN_STATE OFF >	The MXA310 will respond with one of these strings.
Get Segments LED State (Use when GUI Lighting Style is set to SEGMENTS)	
Command String: < GET x CHAN_LED_IN_STATE >	This command is only available when both "Mute Control Function" is set to "Logic Out" or "Disabled" AND Light Ring "Lighting Style" is set to "Segments" in the GUI.
MXA310 Response: < REP x CHAN_LED_IN_STATE ON > < REP x CHAN_LED_IN_STATE OFF >	The MXA310 will respond with one of these strings.

Set Segments LED State(Use when GUI Lighting Style is set to SEGMENTS)		
	Command String: < SET x CHAN_LED_IN_STATE ON > < SET x CHAN_LED_IN_STATE OFF >	Where x is ASCII channel number: 1 through 4. Send one of these commands to the MXA310. This command is only available when both "Mute Control Function" is set to "Logic Out" or "Disabled" AND Light Ring "Lighting Style" is set to "Segments" in the GUI.
	MXA310 Response: < REP x CHAN_LED_IN_STATE ON > < REP x CHAN_LED_IN_STATE OFF >	The MXA310 will respond with one of these strings.
Get LED Brightness		
	Command String: < GET LED_BRIGHTNESS >	
	MXA310 Response: < REP LED_BRIGHTNESS n >	Where n can take on the following values: 0 = LED disabled 1 = LED dim 2 = LED default
Set LED Brightness		
	Command String: < SET LED_BRIGHTNESS n >	Where n can take on the following values: 0 = LED disabled 1 = LED dim 2 = LED default
	MXA310 Response: < REP LED_BRIGHTNESS n >	
Get LED Mute Color		
	Command String: < GET LED_COLOR_MUTED >	
	MXA310 Response: < REP LED_COLOR_MUTED nnnn >	Where nnnn can be RED, GREEN, BLUE, PINK, PURPLE, YELLOW, ORANGE, or WHITE
Set LED Mute Color		
	Command String: < SET LED_COLOR_MUTED nnnn >	Where nnnn can be RED, GREEN, BLUE, PINK, PURPLE, YELLOW, ORANGE, or WHITE
	MXA310 Response: < REP LED_COLOR_MUTED nnnn >	
Get LED Unmute Color		
	Command String: < GET LED_COLOR_UNMUTED >	
	MXA310 Response: < REP LED_COLOR_UNMUTED nnnn >	Where nnnn can be RED, GREEN, BLUE, PINK, PURPLE, YELLOW, ORANGE, or WHITE
Set LED Unmute Color		
	Command String: < SET LED_COLOR_UNMUTED nnnn >	Where nnnn can be RED, GREEN, BLUE, PINK, PURPLE, YELLOW, ORANGE, or WHITE
	MXA310 Response: < REP LED_COLOR_UNMUTED nnnn >	
Get LED Mute Flashing		
	Command String: < GET LED_STATE_MUTED >	
	MXA310 Response: < REP LED_STATE_MUTED nnn >	Where nnn can be ON, OFF, or FLASHING
Set LED Mute Flashing		
	Command String: < SET LED_STATE_MUTED nnn >	Where nnn can be ON, OFF, or FLASHING
	MXA310 Response: < REP LED_STATE_MUTED nnn >	
Get LED Unmute Flashing		
	Command String: < GET LED_STATE_UNMUTED >	
	MXA310 Response: < REP LED_STATE_UNMUTED nnn >	Where nnn can be ON, OFF, or FLASHING
Set LED Unmute Flashing		
	Command String: < SET LED_STATE_UNMUTED nnn >	Where nnn can be ON, OFF, or FLASHING
	MXA310 Response: < REP LED_STATE_UNMUTED nnn >	