



Director
M6400 / M4800 / D4600

RTI Driver User Guide

Driver developed by



Introduction

This driver has been designed to provide two-way control of the AudioControl Director M6400, M4800 and D4600 matrix amplifiers, via Ethernet. The driver automatically exposes the available commands and variables depending on the model chosen in the configuration properties.

This driver has been tested using firmware version 0.1.16_NCB RA.

Driver Installation & Configuration

Open your RTI Integration Designer system file (or use the demo programming file entitled "AudioControlDirector_Demo.rti"). Select your XP series processor from the **System Workplace** window and choose the **Drivers** tab.

The driver features a number of configuration properties that must first be completed.

Settings	Description
System Settings	Processor – the XP-series processor running the driver.
Connection Type	Connection Type – this is fixed to Network(TCP). IP Address – the IP address of the M6400. TCP Port – the TCP port used for the Telnet connection (this will usually be port 23).
Director Model	Director Model - Choose between M6400, M4800 or D4600.
Zone Names	Zone x Name – enter a friendly name for each zone. Digital Output x Name – enter a friendly name for each digital output.
Group Names	Group x Name – enter a friendly name for each group.
Input Names	Input x Name – enter a friendly name for each input. Digital Input x Name – enter a friendly name for each digital input.
Debug Settings	Debug Enable – support use only. Debug Subsystems – support use only.

Table 1: Driver Properties

Driver Commands

The driver features a number of commands used for control. To view and add commands:

- Select the **Drivers** tab in the **Library Browser** window.
- Choose the **AudioControl Director** driver from the **Driver** dropdown list.
- Select a command in the **Driver Commands** box to configure its parameters and then drag it onto the appropriate button.

Command	Description
Power Director	Power the Director on and off.
Signal Sense All	Enable or disable signal sense for all zones.
All Zones Power	Power all zones on and off.
Set Selected Zone	Choose a zone to control.
Select Input	Switch a particular zone to a given input.
Zone Power	Power a specific zone on and off.
Volume +/-	Adjust the volume of a specific zone.
Set Volume	Set the volume level of a specific zone (0-100).
Mute	Enable or disable mute for a specific zone.
Bass +/-	Adjust the bass level for a specific zone.
Set Bass	Set the bass level for a specific zone (0-20).
Treble +/-	Adjust the treble level for a specific zone.
Set Treble	Set the treble level for a specific zone (0-20).
Loudness	Enable or disable Loudness for a specific zone.
Recall EQ	Choose a preset EQ configuration (1-6) for a specific zone.
LipSync +/-	Adjust the Lipsync for a specific zone.
Set LipSync	Set the Lipsync value for a specific zone (0-20).
Signal Sense	Enable or disable signal sense for a specific zone.
Set Selected Group	Choose a group to control.
Group Select Input	Switch all zones in a particular group to a given input.

Group Power	Power all zones in a particular group on and off.
Group Volume +/-	Adjust the volume of all zones in a particular group. N.B.: See notes below about group locking
Group Set Volume	Set the volume level of all zones in a particular group (0-100). N.B.: See notes below about group locking
Group Mute	Enable or disable mute for all zones in a particular group.
Group Bass +/-	Adjust the bass level for all zones in a particular group.
Group Set Bass	Set the bass level for all zones in a particular group (0-20). N.B.: See notes below about group locking
Group Treble +/-	Adjust the treble level for all zones in a particular group.
Group Set Treble	Set the treble level for all zones in a particular group (0-20). N.B.: See notes below about group locking
Group Loudness	Enable or disable Loudness for all zones in a particular group.
Group Recall EQ	Choose a preset EQ configuration (1-6) for all zones in a specific group.
Group/Degroup Zone	Add or remove a particular zone to a particular group.

Table 3: Driver Commands

Driver Variables

The driver features a number of variables, providing feedback from the Director.

Variable	Description
Selected Zone Status	
Zone Name	The name of the currently selected zone.
Zone x Selected	Boolean value indicating whether zone is currently selected.
Power	The power status of the currently selected zone.
Input Name	The name of the input connected to the currently selected zone.
Input x Active	A Boolean that is true if the Analog Input is currently selected.
Digital Input x Active	A Boolean that is true if Digital Input is currently selected.
Grouped	Indicates if the currently selected zone is the member of a group.
Ungrouped	Indicates if the currently selected zone is not the member of a group.

Group Number	The number of the group of which the current selected zone is a member.
Group Name	The name of the group of which the current selected zone is a member.
Volume	The volume level of the currently selected zone.
Mute	The mute status of the currently selected zone.
Bass	The bass level of the currently selected zone.
Treble	The treble level of the currently selected zone.
Loudness	The loudness status of the currently selected zone.
EQ	The current EQ preset applied to the currently selected zone.
Lip Sync	The Lip Sync value for the currently selected zone.
Signal Sense	The Signal Sense status of the currently selected zone.
Zone x Status	
Zone x Name	The name of a particular zone.
Zone x Power	A Boolean reporting the power status of a specific zone.
Zone x Input Name	The name of the input connected to a specific zone.
Zone x Input y Active	Boolean variable reporting the status of the connection between specific inputs and outputs.
Zone x Grouped	A Boolean that is true if the zone is in a group.
Zone x Ungrouped	A Boolean that is true if the zone is not in a group.
Zone x Group Number	An Integer that gives the index of the zone's group (0 if not in a group).
Zone x Group Name	The name of the zone's group (empty if not in a group).
Zone x Volume	The current volume level of a specific zone. N.B: There is no feedback given for group volume. However, zone volume is available, so if you need feedback for a group's volume, set the feedback variable to the zone volume of one of the zones in the group. Also see notes below about group locking.
Zone x Mute	A Boolean reporting the mute status for a specific zone.
Zone x Bass	The current bass level of a specific zone. N.B.: There is no feedback given for group bass or treble. See notes below about "Best practice for volume/bass/treble configuration".
Zone x Treble	The current treble level of a specific zone.

Zone x Loudness	A Boolean reporting the loudness status for a specific zone.
Zone x EQ	The current EQ preset applied to a specific zone.
Zone x Signal Sense	A Boolean reporting the signal sense status for a specific zone.
Digital Out x Status	
Digital x Name	The name of a specific digital output.
Digital x Power	The power status of a specific digital output.
Digital x Input Name	The name of the input connected to a specific digital input.
Digital Out x Input y Active	Boolean variable reporting the status of the connection between specific inputs and digital outputs.
Digital Out x Digital Input y Active	Boolean variable reporting the status of the connection between specific digital inputs and digital outputs.
Selected Group Status	
Group Name	The name of the currently selected group.
Group x Selected	The number of the currently selected group.
Input Name	The name of the input to which the currently selected group is connected.
Input x Active	A Boolean that is true if the Analog Input is currently selected.
Digital Input x Active	A Boolean that is true if the Digital Input is currently selected.
Selected Group Active	A Boolean that is true if the selected group is active (i.e. have zones assigned to it)
Selected Group Inactive	A Boolean that is true if the selected group is inactive (i.e. doesn't have any zones assigned to it)
Zone x Selected	A Boolean that is true if the selected group contains this zone
Zone x Unselected	A Boolean that is true if the selected group does not contain this zone
Group x Selected	
Group x Current Input	The input to which the specific group is connected.
Group x Input y Active	A Boolean that is true if the Analog Input is currently active in the specified group.
Group x Digital Input y Active	A Boolean that is true if the Digital Input is not currently active in the specified group.
Group x Active	A Boolean that is true if the specified group is active (i.e. have zones assigned to it)
Group x Inactive	A Boolean that is true if the specified group is inactive (i.e. doesn't have any zones assigned to it)

Group x Zone y Selected	Boolean variable reporting if a particular zone is part of a specific group.
Group x Zone y Unselected	Boolean variable reporting if a particular zone is not part of a specific group.
System Status	
Power	The power status of the Director.
Voltage	The current voltage draw of the Director.
Voltage High	A Boolean variable reporting when the voltage draw of the Director is critically high.
Voltage Normal	A Boolean variable reporting when the voltage draw of the Director is normal.
Voltage Low	A Boolean variable reporting when the voltage draw of the Director is critically low.
Protection	A Boolean variable reporting the current status of "Protection Mode".
Zone x Short	A Boolean variable reporting the current Short status of the zone.
Temperature	The current temperature reported by the Director.
Temperature High	A Boolean variable reporting when the temperature level of the Director is critically high.
Temperature Normal	A Boolean variable reporting when the temperature level of the Director is normal.
Temperature Cool	A Boolean variable reporting when the temperature level of the Director is critically low.
Operational Mode	Reports the current connection status.

Table 4: Driver Variables

Group locking

If you group zones together, you should also lock the zones as shown below:

Figure 1 - Audio Control web interface

Signal Source

Temperature106°F / Normal

Logs6

Identify unit:

OnOff

Signal Source												Temperature	Protection
Output	Name	Zone	Group	On	Standby	Status	Local	Bus A	Bus B	Trim			
1	Zone 1	1	1	On	Off	Off	Local	Bus A	Bus B	+0.0		104°F / Normal	Normal
2	Zone 2	2	1	On	Off	Off	Local	Bus A	Bus B	+0.0		104°F / Normal	Normal
3	Zone 3	3		On	Off	Off	Local	Bus A	Bus B	+0.0		109°F / Normal	Normal
4	Zone 4	4	2	On	Off	Off	Local	Bus A	Bus B	+0.0		109°F / Normal	Normal
5	Zone 5	5	N/A	On	Off	Off	Local	Bus A	Bus B	+0.0		110°F / Normal	Normal
6	Zone 6	6	N/A	On	Off	Off	Local	Bus A	Bus B	+0.0		110°F / Normal	Normal
7	Zone 7	7	N/A	On	Off	Off	Local	Bus A	Bus B	+0.0		104°F / Normal	Normal
8	Zone 8	8	N/A	On	Off	Off	Local	Bus A	Bus B	+0.0		104°F / Normal	Normal

Zone 4Zone 5Zone 6Zone 7Zone 8

Assignment

Group 1

Speaker calibration profile

Brand: None

Shelving

2.5 kHz 12 kHz Bass Treble

Max Vol (%) 100

Set On Volume (%) 100

Group Lock ☒

Volume

High and Low Pass Filters

Type

☒ Subsonic Filter & Tweeter Protection

☐ Low Pass Mode (Subwoofer)

☐ High Pass Mode (Mids and Highs)

☐ Band Pass Mode (Midrange / Midbass)

High Pass (Hz) 30 Low Pass (Hz) 18k

Loudness

Group feedback when zones are locked

- Adjusting a zone's volume will give feedback for just that zone, but all zones will change
- Adjusting a group's volume will give feedback for just the first *zone (not group)*, but all zones will change

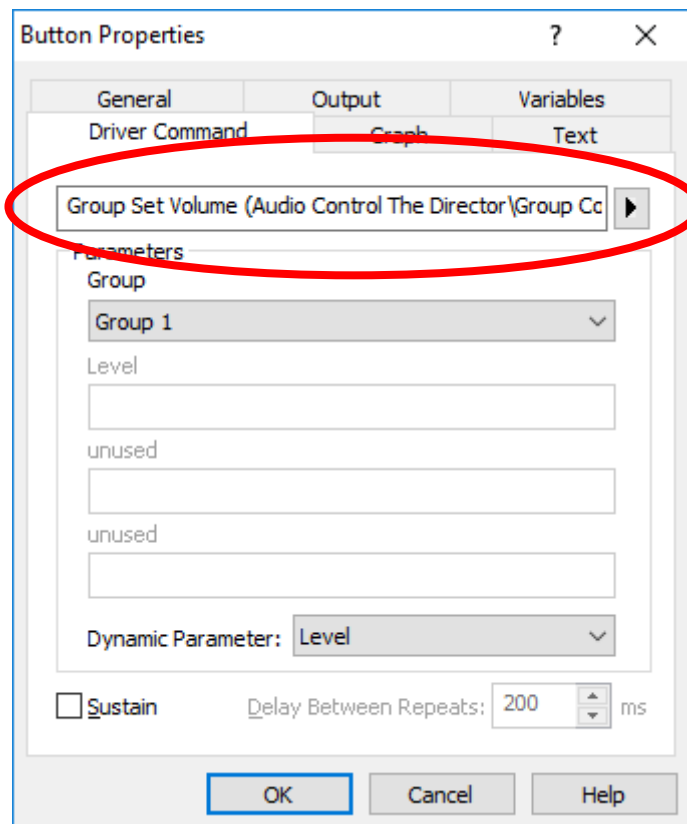
Group feedback when zones are unlocked

- Adjusting a zone's volume will give feedback for just that zone, and only that zone will change
- Adjusting a group's volume will give feedback for just all *zones (not group)*, and all zones will change

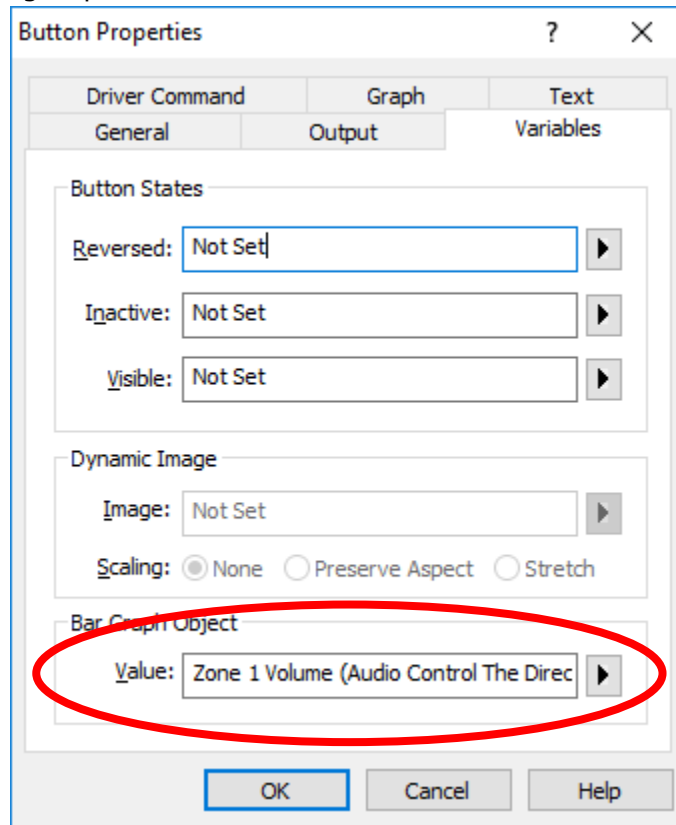
Best practice for volume/bass/treble configuration

The best practice for setting up groups and feedback is as follows:

1. Set up groups and lock those groups using the web interface as shown in figure 1 above
2. On the control (e.g. a slider control), set the driver command to set the group volume:



- In the variables tab, set the feedback to be the *zone* volume for the first zone in the group. So, for the screenshots shown in figure 1, I would use zone 1 for group 1, and zone 3 for group 2:



The same setup should be used when configuring bass and treble feedback.