

AccessEzTM
Demonstration Network

Model 972 Installation Manual



**Access Switching System Interface
for Model 1374A HDMI Switcher**



About the 972 HDMI Access Interface

The Model 972 HDMI Interface allows Audio Authority Model 1374A (or previous Model 1374, see page 8) HDMI switchers to be integrated into an Access™ Demonstration Network. One 972 adapter is required per 1374A HDMI switch. The 972 responds to commands received from the Access System, or it can respond to Product Select Buttons connected directly to the 972 PSB ports. When the 972 receives a switching command from the Access Bus, it translates the number of the product that is to be selected into appropriate RS-232 commands that can be sent to as many as 16 switches in the HDMI selection tree, allowing the desired HDMI source output to be routed downstream to the rest of the demonstration system.

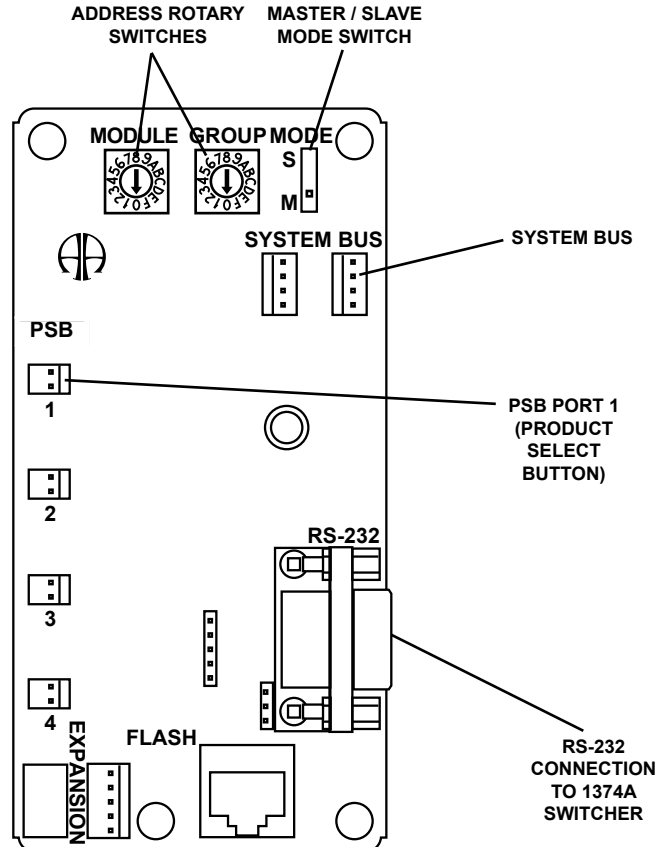
The 972 operates in either Master or Slave Mode. In Master Mode, the 972 behaves like other Access electronics modules and is addressed in the same way as an Access source module except for the special Module ID addressing (see the HDMI address tree on page 6). The address scheme must accommodate the tree structure required for HDMI switches. Module ID addressing is explained in detail below.

In Slave mode, the 972 mirrors the switching activity of an Access electronics module, such as a 922, 954 or 947. The 972 in Slave mode is not directly connected to the EXPANSION port as other Access expanders are, but must be addressed identically to the “master” Access module so that it can receive commands from it through the System Bus. See page 3 and page 7 (Figure 10) for more on Slave mode.

Items included in this package	Other items that may be needed
Model 972 Adapter	System Bus Cable
Mounting Screw Prepack	Product Select Buttons (PSBs)
Male-to-Male Serial Cable	Model 1374A and HDMI Cables

Figure 1. Basic 972 Connections

- Connect the supplied serial cable between the RS-232 ports on the Model 972 and the Model 1374A it is hosting.
- If using PSBs for product selection, plug them into their respectively numbered PSB ports on the 972.
- Connect one of the System Bus ports on the 972 to a vacant System Bus port on any other Access module using a length of system bus cable.
- Each 1374A must be powered by its own wall-mounted power supply (The Model 972 is powered via the Access Bus).

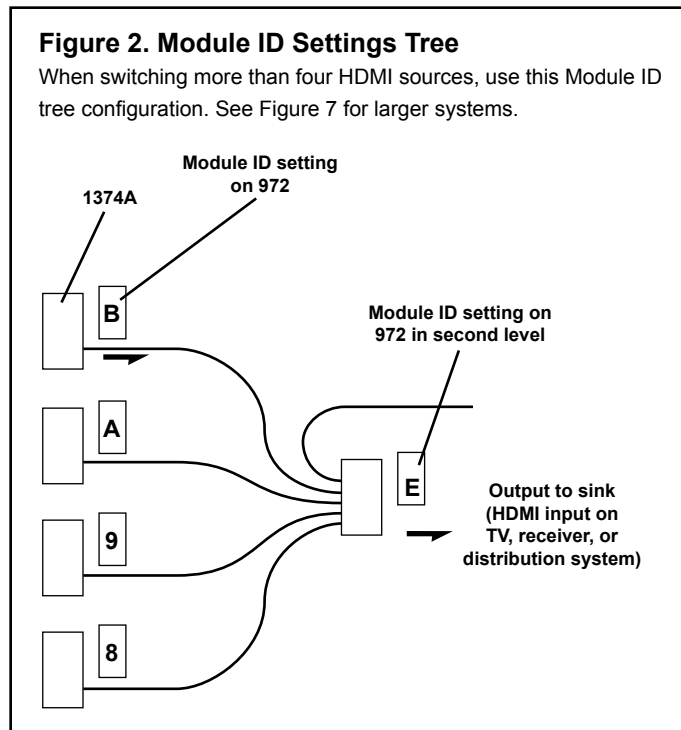


Using the 972 in Master Mode

For source switching, the 972 should generally be used in Master Mode unless HDMI switching is being added to an existing Access switching system. Access System expansion modules can be added to 972s to switch additional signal types, such as stereo audio.

Set the M/S switch on all 972 modules in the source group to M and the Group switches to 0 (use 1 if another source group is already set to 0). Set the Module ID switch according to Figure 2, which also shows how to interconnect multiple 1374As to achieve the desired HDMI switching capacity, up to 48 sources. For more than 4 sources, you must add second and possibly third level HDMI switches to complete the HDMI address tree as shown in Figure 7. The maximum product capacity in Master Mode is 48 HDMI sources.

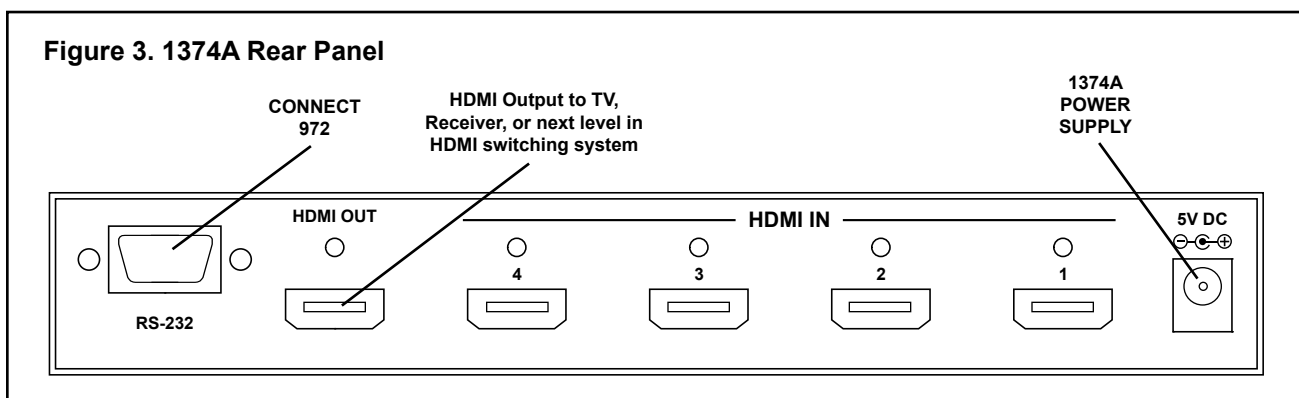
If you are adding the 972 to an existing Access demonstration system in Master Mode to create a new product group, carefully select its address setting. Set the 972 to a Group number that is not used by other Access modules to prevent a conflict.



Using the 972 in Slave Mode

For switching receiver audio outputs, it is usually best to use 972 in Slave Mode with the 947. It may also be convenient to use the 972 in Slave Mode if HDMI switching capability is being added to an existing Access source group as shown in Figure 10. In that case, the 972 acts as an expander module to a 955 module, but it does not connect in the same physical manner as an expander module.

Set the M/S switch to S. Set the Group and Module ID to match the Group and Module ID of the existing Access switch module(s) you would like to mirror. For more than 4 sources, you must add second and possibly third level HDMI switches to complete the HDMI switching tree as shown in Figure 7. The second and third level modules do not act as expanders to individual Access modules—set their Module ID according to the illustration and Figure 7 and 8. The maximum product capacity in Slave Mode is 40 HDMI sources.



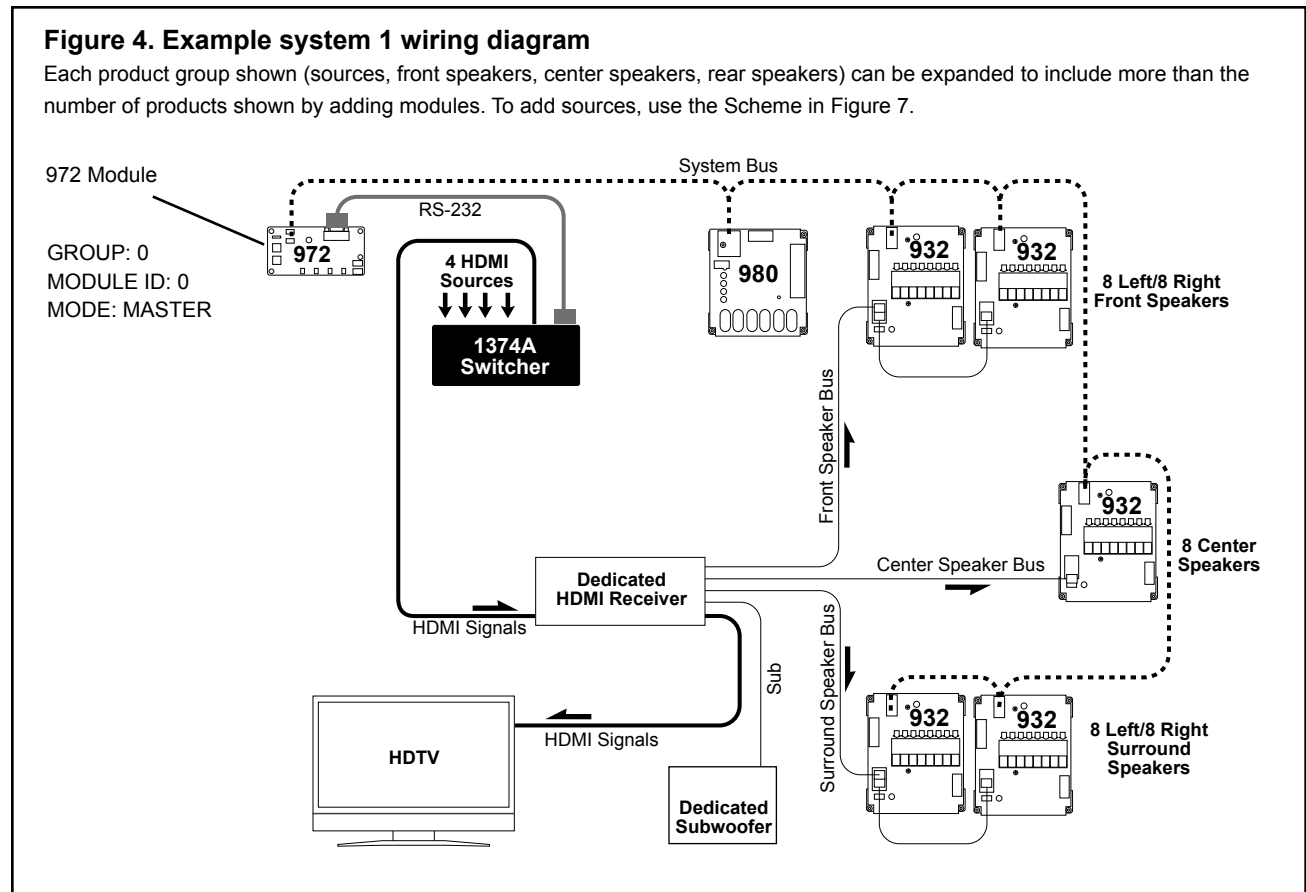
Example System 1

A typical application for the 972 is to add HDMI source switching to a speaker switching system.

- The HDMI sources send audio and video to a dedicated HDMI receiver.
- The receiver's speaker outputs are switched using Access speaker switching modules.
- The HDMI output of the receiver can provide audio to a TV, or the TV can be muted.
- Selections can be made using a control panel and/or product select buttons.

Connections

The Access switch modules including the 972 for each HDMI switcher are connected to the Access System Bus for power and to receive commands from the control panel and/or product select buttons. Each 1374A must be powered by its own power supply.



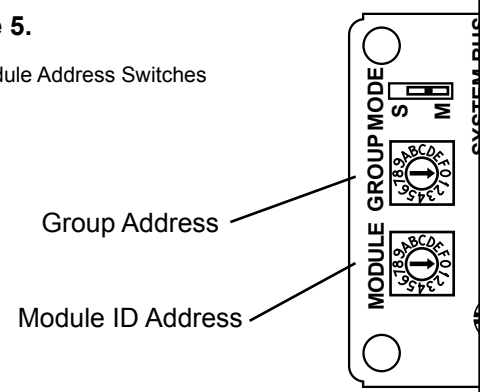
Address Settings

There is only one source group, so 972 module should be set to Group 0, and there is only one 972 module in the group, so the Module ID setting should be 0.

To expand the number of HDMI sources, follow the address scheme in Figure 7 and 8. Refer to the Access System manual for settings on other switch modules.

Figure 5.

972 Module Address Switches



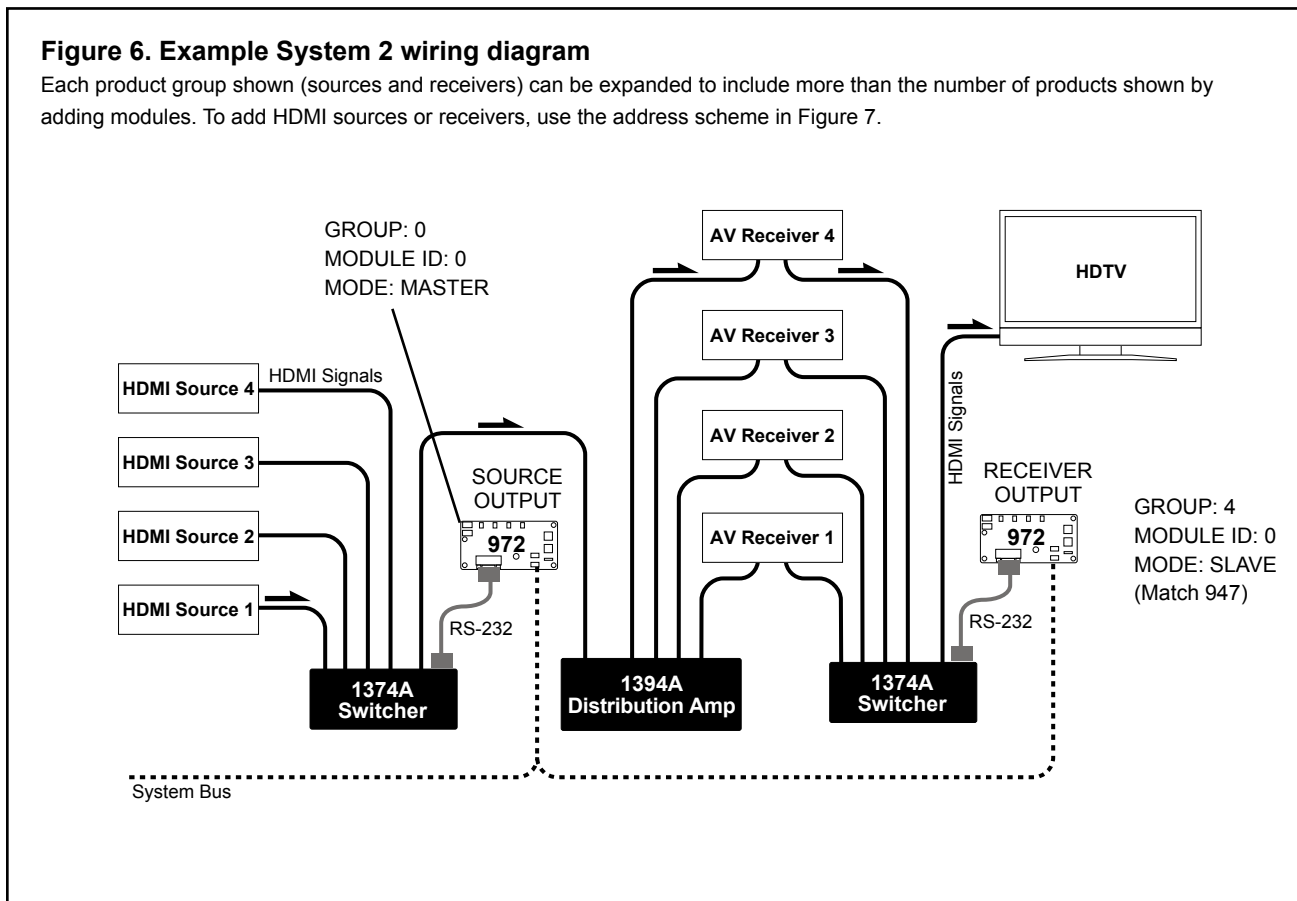
Example System 2

In Example 2 the 972/1374A modules are configured for source output and then for receiver output. This configuration would involve Access switching for receiver audio output and speaker switching (Model 947 and 932 modules), but only the HDMI portion is shown for clarity.

- The HDMI sources send digital audio and video through a 1374A switcher to a Model 1394A HDMI distribution amp. 972 is in Master Mode.
- The receivers all receive HDMI from the 1394A amp but their output is switched so that only one receiver's video output is shown on the TV at one time. 972 is in Slave Mode, mirroring the behavior of a 947 receiver switch module.
- The 5.1 channel audio outputs from the receivers are switched using Model 947, and multiple speakers are switched using 932 modules (Access modules not shown below).
- Selections can be made using a control panel and/or product select buttons (See Access manual for detail).

Connections

The Access switch modules, including the 972, for each HDMI switcher are connected to the Access System Bus for power and to receive commands from the control panel and/or product select buttons. Each 1374A must be powered by its own power supply.



Address Settings

The 972 module(s) in the source group should be set to group 0 (MASTER mode), and the receiver group 972 module(s) should be set to group 4 (SLAVE mode, matching the Model 947 switching group number). Module ID settings should follow Figure 7 for any 972 module group.

Figure 7. Module ID Settings Tree

When switching more than four HDMI sources, use this Module ID tree configuration. This diagram shows the maximum number of HDMI inputs possible in an Access switching system.

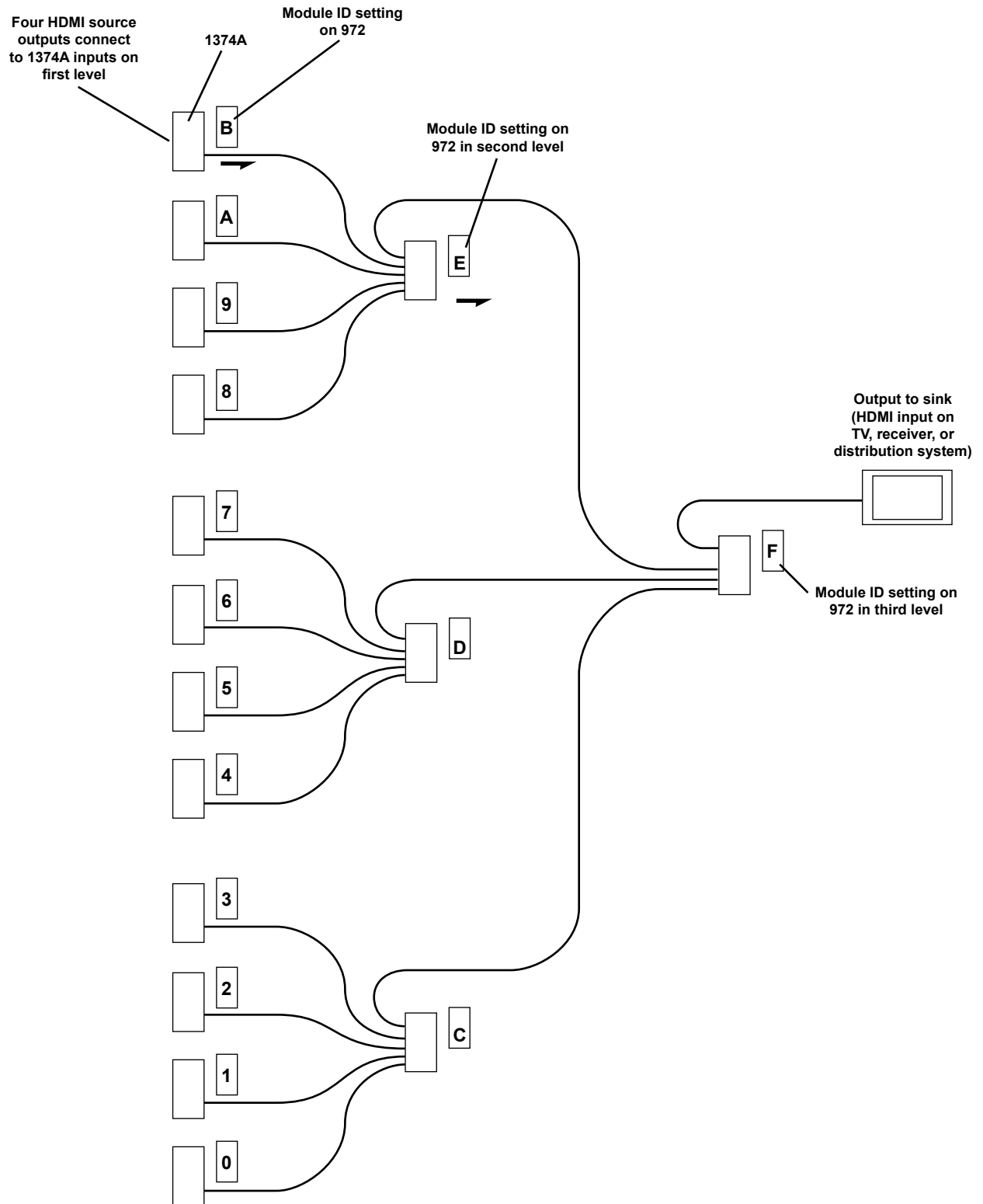


Figure 8. Module ID Settings Chart

Address settings for different HDMI switching capacities are listed below.

HDMI Sources	1 st Level Module ID	2 nd Level Module ID	3 rd Level Module ID
4	0	n/a	n/a
8	0, 1	C	n/a
12	0, 1, 2	C	n/a
16	0, 1, 2, 3	C	n/a
20	0 - 4	C, D	F
24	0 - 5	C, D	F
28	0 - 6	C, D	F
32	0 - 7	C, D	F
36	0 - 8	C, D, E	F
40	0 - 9	C, D, E	F
44	0 - A	C, D, E	F
48	0 - B	C, D, E	F

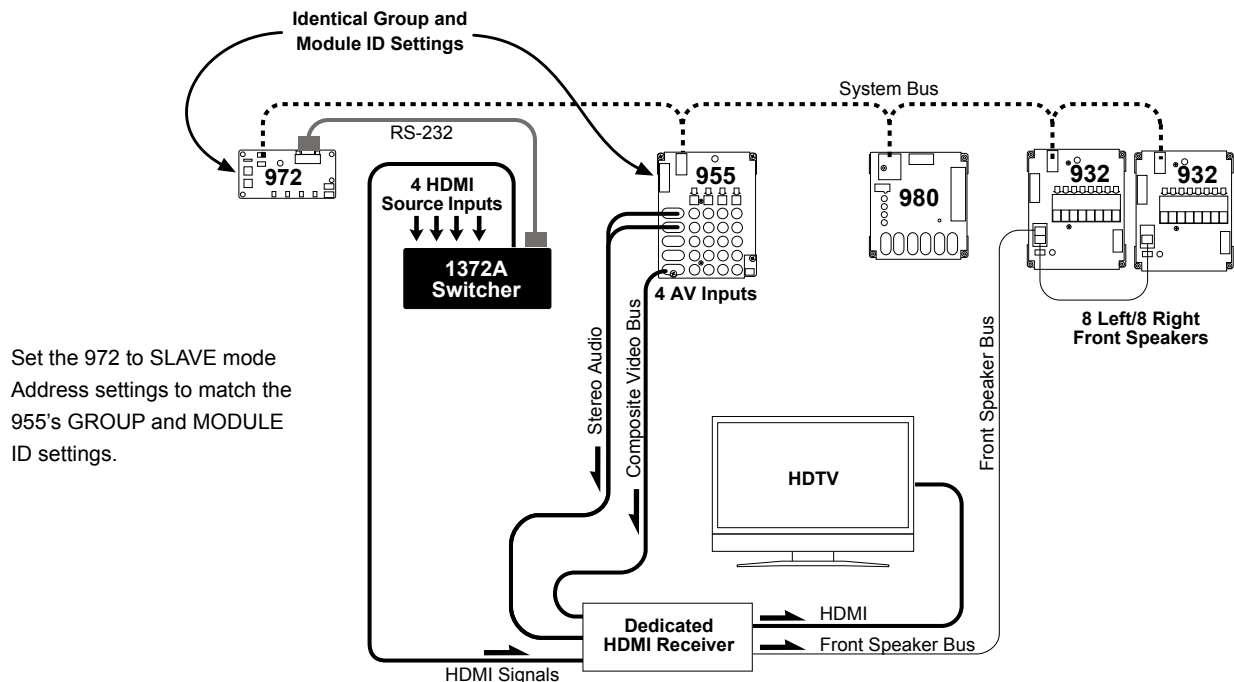
Figure 9. System Size Calculator

Use the following chart to calculate the quantity of 972 and 1374A modules required for different sized systems.

HDMI Sources	Quantity of 1374A/972 pairs
4	1
8	3
12	4
16	5
20	8
24	9
28	10
32	11
36	13
40	14
44	15
48	16

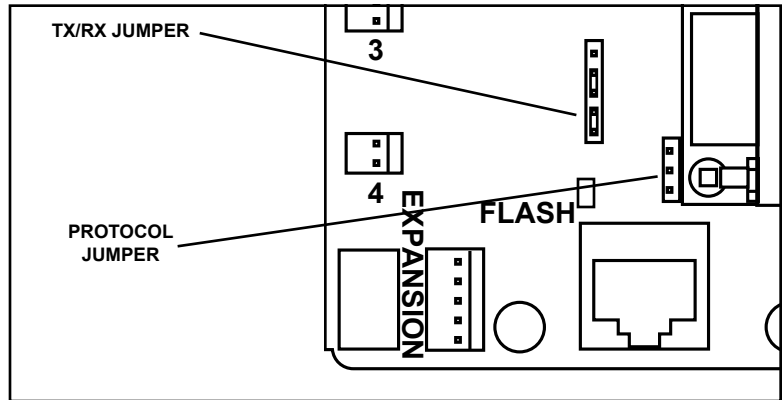
Figure 10. Slave Mode Example System

This system diagram shows how to add HDMI signal switching to an existing Access switching system. The system now has the capacity to switch digital audio and video signals from the four sources to the dedicated HDMI receiver. PSBs connected to the 955 select the 972 HDMI Source positions as well as the audio and video channels switched by the 955. The maximum product capacity in Slave Mode is 40 HDMI sources.



Using 1374 vs. 1374A

The 972 works with the Model 1374A, but can also work with the previous version, Model 1374 with some adjustments, depending on the type of RS-232 cable used. Call Audio Authority Technical Support for details.



Troubleshooting Guide

Symptom	Possible Cause
972 Mon lamp is not blinking	<ul style="list-style-type: none"> Faulty bus connection
PSBs do not respond to Access System	<ul style="list-style-type: none"> Mode switch is set incorrectly Address settings are incorrect
PSBs respond correctly, but HDMI switch does not respond	<ul style="list-style-type: none"> Check outlet and power supply connections to 1394A Protocol does not match HDMI switch type (call Audio Authority) Pinout jumper incorrect for HDMI switch type Bad RS-232 Cable



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