Using the Audio Sensing Feature on HDA Devices

Last Modified on 11/03/2022 7:52 pm EDT

URC HDA devices and Accelerator software provide countless options to configure and optimize audio settings to achieve performance and flexibility for almost any application.

One of those features is the **audio sensing automation** capabilities for HDA devices (amps & input devices). This feature allows for the activation of any macro or turn-on of a zone when signal is sensed at the audio input.

This article provides information on configuring, programming, and using the **audio sensing automation** capabilities on the HDA-4100, HDA-8100, HDA-130 and HDA-1600 amplifiers as well as the HDA-IO Stream Adapter and details the procedure for configuring the **audio sensing** settings when using Accelerator 3 software.



Audio Sensing Inputs:

- The HDA-4100 contains four (4) audio sensing inputs (pictured above).
- The HDA-8100 contains eight (8) audio sensing inputs. Only one of the digital inputs can be used for audio sensing, whatever one is assigned in Accelerator during the initial setup.
- The HDA-1600-70V contains six (6) audio sensing inputs when used with two microphones. It has five sensing inputs when used with the balanced stereo line in.
- The HDA-IO contains one (1) audio sensing input*.
- The HDA-130 contains two (2) audio sensing inputs.

* The HDA-IO audio sensing input is only available when the HDA-IO is being used as an <u>input</u> device. When using the HDA-IO as a stream injector, the input selected for use as the streaming input is the only input providing audio sensing.

Configuring for Audio Sensing Automation:

Step 1: The initial settings are done under Accelerator Step #5-Base Station Setup and Step #5b-Sensors. The example below shows using the HDA-4100, Port #1 (analog/unbalanced audio input 1) as the desired sensing input.

Program Tools Communications	Help					
				:	ŝ	Q
2 4.Add Othe 5.Base Station Network 7.Prop Devices Setup	erties 8.AV Inputs 9.UF ager & Outputs 9	RC Audio Setup S	10.URC 1 ubsystems	1.Edit User 1 Interfaces	2.Macro Editing	13.Punch Through {
st	ep 5 Base Station Setup:	SENSORS				
	a.IR & RS232 b.Sensor	s c.12V/R	elay			
	Base Station	Port	Sensor Mode		Device	
	MRX-8(Office)	1				
	MRX-8(Office)	2			_	
	HDA-4100(Office)	1		-		
	HDA-4100(Office)	2	Power Trackin URC Sensor Ti	g rigger		
	HDA-4100(Office)	3				
	HDA-4100(Office)	4				
	HDA-1600-70V(Offi	1				
	HDA-1600-70V(Offi	2				
	HDA-1600-70V(Offi	3				
	HDA-1600-70V(Offi	4				
	HDA-1600-70V(Offi	Bal 1				
	HDA-IO(Office)	1				

Step 2: From the list of available devices, drag over the audio device to the correct port on the HDA unit and verify that <u>URC Sensor Trigger</u> is selected, not Power Tracking. The example below shows the Media Player connected to Port #1 on an HDA-4100 amplifier.

The available options for URC sensors are:

• Power Tracking (not used for this scenario)

• URC Sensor Trigger - This is the setting required when using the audio sensing feature

Tools Communications	Help					
		く勞		C. Solution		$\underline{\downarrow}$
5.Base Station Setup Setup Ma	perties 8.AV Inputs 9.UP nager & Outputs	RC Audio Setup	10.URC 11.Edit User Subsystems Interfaces	12.Macro 13.Punch Editing Through	h 14.Themes h & Graphics	Download
	System Designer		-			Download & T
	Step 5 Base Station Setup:	SENSORS	;			
	a.IR & RS23: b.Sensor	rs :.12V/	Relay			
	Base Station	Port	Sensor Mode	Device	Check Se	nsor
	MRX-8(Office)	1			Available D	evices
	MRX-8(Office)	2				Office
	HDA-4100(Office)	1	URC Sensor Trigger	Media Player	Inf	ormation
	HDA-4100(Office)	2			Stand	
	HDA-4100(Office)	3				
	HDA-4100(Office)	4				
	HDA-1600-70V(Offi	1				
	HDA-1600-70V(Offi	2				
	HDA-1600-70V(Offi	3				
	HDA-1600-70V(Offi	4				
	HDA-1600-70V(Offi	Bal 1				
	HDA-IO(Office)	1				
1.1						

Step 3: Go to Accelerator Step #12c, Special Macros. On the left-side pull-down menu select **URC Sensor Trigger Macros**.

Ø

ns Help								
	口影	1	:	G₽,	9 <mark>9</mark> 9	60	\downarrow	
Properties 8.AV Inputs Manager & Outputs System Designer	9.URC Audio Setup Su	10.URC ibsystems	11.Edit User Interfaces	12.Macro Editing	13.Punch Through	14.Themes & Graphics	Down Download	load d & Test
Step 12 Macros: Edit S	pecial Macros	<u>م</u>	Q		r¢n			
a.Auto Macro Gene	ration b.Macro	By Room	c.Special M	acros d./	Automation	Macros e.1	KP-100 Ma	cros
Select Type of Specia	Macro :	Sensor :	HDA-4100 (M	edia Player 吐↔ I Ø	ර බූ ලා ලා ස්	ኳጩ 4 @	⁺_∰_+	Connected [
Device Power Macros Room Power Macros System Off Macros Universal Macros		Power (On/Start	Power Off/	/Stop			Connected Office Zone 1LR (H
URC Sensor Trigger Ma Event finite Macros Alarm Clock Macros Sleep Timer Macros URC Amp Ducking Even URC Amp Paging Even	acros nt t							Vol- Mute Power Mute On Mute Off Treble+ Treble-

Step 4: The unprogrammed trigger macro event will be listed in red (as shown below):

s Help				-	_
	L.				\downarrow
roperties 8.AV Inputs 9.URC Audio 1 lanager & Outputs Setup Sub System Designer	0.URC 11. Disystems In	Edit User 12. terfaces E	Macro 13.Pu diting Throu	nch 14.Them igh & Graphi	es Download
Step 12 Macros: Edit Special Macros					
		000	[
a.Auto Macro Generation b.Macro	By Room c.	Special Macr	os d.Automa	ation Macros	e.TKP-100 Mac
URC Sensor Trigger Macros) X 壁 ·		回盘跟4	~ @→ ⋳₽ ≑
Select Room :	Power On/	Start Pow	ver Off/Stop		
Add/Delete Nested Macros : Delete Add Macro					
HDA-4100 (Media Player)					

Step 5: In the main macro window, select the **IF Statement Type** button and then select the "Else" option.

Properties 8.AV Inputs 9.URC Audio Manager & Outputs Setup Su System Designer	NO.URC 11.Edit User 12.Macro 13.Punch 14.Themes Down ubsystems Interfaces Editing Through & Graphics Downloa
Step 12 Macros: Edit Special Macros	
a.Auto Macro Generation b.Macro	o By Room C.Special Macros d.Automation Macros e.TKP-100 Ma
Select Type of Special Macro :	Sensor : HDA-4100 (Media Player)
URC Sensor Trigger Macros] ▶ ● □ X 🖳 → @ 🗆 আ 🏝 ଊ ⁄ 🗣 🖧 🍹
Select Room :	Power On/Start Power Off/Stop
·	*
Add/Delete Nested Macros :	
Delete Add Macro	TE Statement Type
HDA-4100 (Media Player)	I Statement Type
	Select the type of IF/Else you want to add to the macro. The type can't be changed after creation.
	Fice
•	+AND/EISE
	HOR/EISE

Step 6: After selecting "Else", the **IF Setting** window will pop up asking you to select the Type of action/trigger desired. Select the **Sensor** option radio button as shown below then select the specific input being used for audio sensing. In the example below, I choose the Base Station as the HDA-4100 and the Sensor as the Media Player device assigned in Step 2. You will then select the ON or OFF option.

ON = when signal is sensed

OFF = when signal	is not sensed
-------------------	---------------

Step 12 Macros: Edit Special Macros					
a.Auto Macro Generation b.Macro	By Room c.Special Macro	s d.Automation Macros	e.TKP-100 Macros		
Select Type of Special Macro :	Sensor : HDA-4100 (Media	Player)	Cor	nnected Device	Connected Device
URC Sensor Trigger Macros) 🕼 🗉 🖾 恐 🖇	~ @+ ⊕= [*] = Co	onnected Device	Connected Device
Select Room :	Power On/Start Powe	er Off/Stop	Of	ffice	r Office
Add/Delete Nested Macros : Delete Add Macro HDA-4100 (Media Player)		IF Setting Type True Pre Relay 124 Base Station Sensor Me O () ()	A-4100 dia Player DN DFF	• Sensor ostat O Device Power	© Device Condition ⊙ Time / Date
			ОК	Close	

Step 7: You can then program a macro as needed for when the input senses audio. The example below shows a Room Pwr macro inserted below the **IF** query. Any macro can be used in this location and considerations should be made for source tracking, etc.

Step 12 Macros: Edit Special Macros		
a.Auto Macro Generation b.Macro	By Room c.Special Macros d.Automation Macros e.TKP-100 Mac	cros
Select Type of Special Macro :	Sensor : HDA-4100 (Media Player)	Connected Device
URC Sensor Trigger Macros *	▶ ● □ × 및 ↔ @ □ ⊉ ಔ ∻ ₽ # _ *	Room Power Macros *
Select Room :	Power On/Start Power Off/Stop F [Sensor HDA-4100::Media Player, ON]	Office •
Add/Delete Nested Macros :	ELSE	Office Off Office On
HDA-4100 (Media Player)		

Step 8: If using a **Ducking Event** with a device such as a jukebox, you may have to adjust the **Sensor Delay** setting to prevent the Ducking Event from reverting back to the main audio source prematurely. The image below shows a setting of 8 sec to prevent the jukebox from reverting back during quiet passages or during song transitions. You may need to adjust this setting depending upon the specific audio source being sensed by the HDA equipment.

Communications Help					-
			30 6	$\overline{\mathbf{h}}$	
tation 6.Network 7.Properties 8.AV Inputs p Setup Manager & Outputs System Designer	9.URC Audio Setup	11.Edit User 12.Macro 13. Interfaces Editing Thr	Punch 14.Themes rough & Graphics	S Download	Test
Step 9 URC Audio Setup: Input Settings					
a.Inputs b.Input Settings c.Permanen	t Zone Groups d.Zone As	signment e.Zone Settings	f.Sounds g.Ro	oom Link Groups	
Select Device With Inputs HDA(PATIO/BAR)(RACK) HDA(KITCHEN/RESTROOMS)(RACK)	Inputs			+	
HDA(DINING200/300)(RACK)	Input Device	Input Level (db)	Stereo/Mono	Sensor Delay	Sensor Threshold
	Input 1 Sat 1	+6	Stereo	6 sec	0.2 V
	Input 2 Cable Box	+6	Stereo	6 sec	0.2 V
	Input 3 Sat Music	+6	Stereo	6 sec	0.2 V
	Input 4 Jukebox	+4	Stereo	8 sec	0.2 V

Additional Information & Resources:

Please refer to this article giving a basic overview of the HDA Ducking Event and its capabilities

You can also view the short video in the URC Video Portal titled Audio Source Automation: Create automation using HDA audio sensors utilizing a 3rd party audio source as the trigger.

To learn more about HDA products and programming, please see the HDA Programmers Guide or the Accelerator 3 online Programming Guide.