

Configuring your Microphone for Interact-AS[®]



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Version 1.1

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Scope of this Document

Classification

This document is **INTENDED FOR PUBLIC DISTRIBUTION**.

Document Release Control

Release 1.0:	March 5, 2013	R. Jackson
Instructions for configuring microphones for use with Interact-AS.		
Release 1.1:	April 11, 2013	R. Jackson
Updated instructions in Section 3 – added the “finger scratch” test.		

1. CONFIGURING MICROPHONES - OVERVIEW

There are three critical items for your system: your Interact-AS® software, your computer, and the microphone. This document goes into detail on how to select, configure and use microphones. There are separate documents for selecting and configuring your computer, as well as configuring and using the Interact-AS software suite. **If you only have time to read one portion of this document, please read Part 3:**

Here's a quick table of contents:

Selecting your Microphone	provided in Part 2
Configuring the Microphone Settings on your Computer	go to Part 3
Configuring Interact-AS to Use Your Microphone	go to Part 4
Placement of your Microphone	go to Part 5
Debugging your Microphone	go to Part 6

As always, if you have any questions, comments or suggestions about this procedure or any of our products, please do not hesitate to contact us.

All the Best,



Robert Palmquist

President & CEO, SpeechGear Inc. and Auditory Sciences, LLC.

2. SELECTING YOUR MICROPHONE

Auditory Sciences maintains a list of recommended microphones on their website (www.auditorysciences.com). By selecting one of those microphones, you will be all set and can skip over this section and move onto Section 3. If on the other hand you would like to select your own microphone, then do please read the information below.

Why Do I need a High Quality Microphone: A high quality microphone is VERY significant for transcription accuracy. If your microphone has a lot of static, then Interact-AS will go from doing a three-pass analysis to perhaps as many as nine passes. What does that mean? Interact-AS captures the input audio stream and on the first pass identifies stop and start points in the audio stream. In the second pass phonemes are identified, and in the third pass these phonemes are grouped into words. If there is static or other interference in the audio, then additional passes will be performed in an attempt to identify and filter out this noise. This is an iterative process where subsequent passes are matched with the previous pass to determine if an improvement in the recognition has been achieved. The bottom line is that a high quality microphone significantly improves recognition accuracy and the real-time performance.

So, what specifically makes a microphone a good selection for use with Interact-AS?

Item 1: Choose a Near-Field Microphone, NOT a Far-Field Microphone: A *near-field microphone* is one that is positioned close to the person's mouth (or any other audio source such as the audio speaker on a radio or television) – in this case “near” means one to six inches away. Examples include headsets and boom-type microphones. A *far-field microphone* is designed to be placed far away from the person that is speaking. Examples include a microphone placed in the center of a conference room table, or mounted on the top of a computer screen. Interact-AS is designed to filter out noise that originates more than six inches away from a microphone. This is done to eliminate extraneous noises like key clicks or people rocking on chairs. As such, the software works well with Near-Field systems, not Far-Field systems.

Item 2: Choose a Noise Cancelling Microphone, NOT an Omni-directional Microphone: A *noise-cancelling* microphone is designed to filter out external noises. In most cases, this type of microphone will have one element pointed towards the person's mouth; and a second element pointed away from the person's mouth. The audio signals from the two elements are compared, and the extra noise is automatically removed. An *omni-directional* microphone is designed to pick up all audio from all directions. When selecting your microphone, you will want one that is noise cancelling.

Item 3: Wireless FM, NOT Bluetooth: If you want a wireless microphone, then most Bluetooth systems are not recommended. The detailed reason is that the Bluetooth standard only call for 8 KHz / 8-bit audio fidelity (a sampling rate of 8000 samples per second), whereas Interact-AS is designed for 22KHz / 22-bit data. There are some Bluetooth microphones that use a proprietary configuration that do indeed transmit at the higher data rate, so some Bluetooth microphones are acceptable. If you are not sure, the safe way to go is to select a Wireless FM system versus a Bluetooth system.

Item 4: Use a USB Microphone versus an Analog Microphone: Some computers have very poor audio circuitry, and as such suffer from EMI (Electro Magnetic Interference). For example, when a hard disk spins up that can produce a “hum” on the audio channel. If you use a USB port, this issue is completely eliminated. PLEASE NOTE: when using a USB port it is important that you always plug your microphone into the same USB port each time you use Interact-AS.

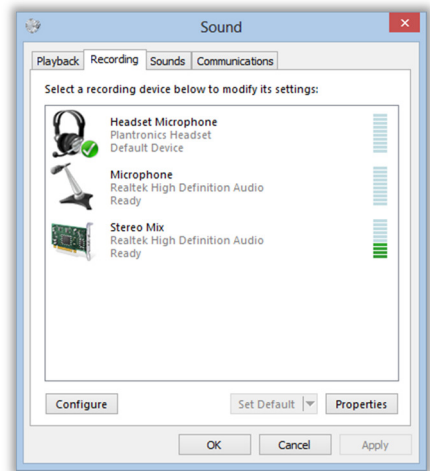
3. CONFIGURING YOUR COMPUTER'S MICROPHONE SETTINGS

Most computers have a built in microphone, whereas Interact-AS requires (in most situations) that you use an external microphone. If you are getting poor transcription accuracy, then it is very likely that Interact-AS is using the computer's built-in microphones. This section tells you how to set up your computer to avoid this. This information is also included in the Quick Start Guide, but here more detail is provided.

Step 1: Go to
Control Panel > Hardware and Sound > Sound

Step 2: Select the **Recording** tab. (A shortcut for Steps 1 and 2 is to right-click on the speaker icon in the lower right corner of your Windows computer).

Step 3: Plug your microphone into your computer. When you do this, the microphone will appear in the **Sound > Recording** window. **PLEASE NOTE, if you are using a USB microphone, then you will always want to plug your microphone into the same USB port each time you use your computer.**



Step 4: Single click on the microphone that you want to use with Interact-AS, which will be the one you plugged into your computer in previous step.

Step 5: Important Test: With your finger nail, scratch the microphone element of the microphone you picked in Step 4. Verify that the sound meter moves when you are doing this and that only that sound meter moves. If it does not move, then your microphone is not working and you will need to contact the manufacturer of the microphone for assistance (or if you purchased the microphone through Auditory Sciences, contact us and we will be glad to help).

Step 6: Click on the **Set Default** button (it is located in the lower right corner of the **Sound** window) and then close the **Sound** window.

That's it, you have now set up your computer. When you use Interact-AS, make sure to have Interact-AS use your computer's default microphone. Instructions for doing that are provided in Section 4 of this document.

4. CONFIGURING INTERACT-AS TO USE YOUR MICROPHONE

This section assumes that you have already completed the steps shown in Section 3.

When you create a User Account in Interact-AS, the microphone settings for that account are remembered. So, if in your system you will be using multiple microphones, perhaps a wireless one for use in a conference room and a desktop one for use in your office, then you can set up a separate user account for each of these situations. In this example, you could call one *Conference Room* and the other *Office*. In this section we will show you how you set up User Accounts to do this, namely which microphone to use.

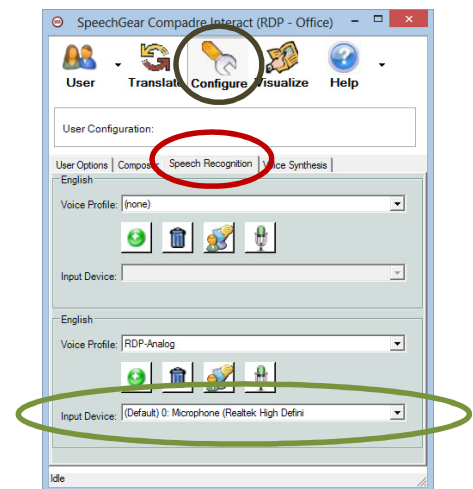
To set a microphone to be used, start Interact-AS and do the following steps:

Step 1: In the User Page, open the desired User Account (double click on the account).

Step 2: Using the Navigation pane, click on the *Configure* icon and then the *Speech Recognition* tab.

Step 3: In the *Input Device* window, click on the down arrow and select the microphone that you want to use.

Step 4: Using the Navigation pane, click on the *Translate* icon and when asked if you want to apply the changes, say yes. **USER TIP:** For most User Accounts it is recommended that you tell Interact-AS to use the *Default* microphone, as is shown in this figure. If you do this, you **MUST** also complete the steps listed in Section 3 of this document.



Step 5: When you close Interact-AS, or when you load another User Account, you will be asked if you want to save your changes. In this case you do indeed want to save those changes, so click on the yes button.

And that's it, you have now selected the microphone that will be used from now on with that user account.

5. PLACEMENT OF YOUR MICROPHONE

The proper placement of your microphone is shown in the following illustration. Ideally, the microphone is positioned about one inch away from the corner of your mouth. You do not want the microphone located directly in front of your mouth, but rather one inch from the corner of your mouth. If you are using a necklace or lapel microphone, then you want to position the microphone as close to your mouth as is reasonably possible, such as wearing the lapel microphone on your shirt collar versus attaching it to the middle of your shirt.



6. DEBUGGING YOUR MICROPHONE

This section contains a few tips for debugging your microphone. As always, feel free to contact the Technical Support team at Auditory Sciences and we will be glad to assist.

Check your Audio Plugs

If your computer has separate *mic-in* and *audio-out* ports, make sure that you have plugged your microphone into the correct port. If your computer has a single port that combines mic-in and audio-out, then for most microphones you will need a special cable that separates this port into two channels, one for *mic-in* and the other for *audio-out*.

USB Port

When using a USB microphone you should always try to (a) always plug the microphone into the same USB port and (b) plug it in prior to launching Interact-AS.

Check your Sound Levels

Interact-AS includes an icon where you can check to see if your microphone is working. This is located in the **Configure > Speech Recognition** page.

Step 1: Click on the **microphone icon** (as is shown in Figure 6-1).

Step 2: Select the microphone you want to test (see Figure 6-2). If your computer only has one microphone, then you will not be shown this display.

Step 3: In this step Interact-AS checks to see if the microphone is working. Click on the **Start Volume Check** button (see Figure 6-3) and simply start talking. Note that during this test you can say anything, you do not need to read the displayed text. Thus, if you are using Interact-AS to translate a presentation the speaker does not have to read the text, whatever they happen to be saying at that moment will work just fine. As you are doing this test, note the position of the blue bar at the right edge of the screen. During the test the blue bar should move. This indicates that the sound level of your microphone is being adjusted. If the blue bar doesn't move, then your microphone sound level is too low; if the blue bar completely disappears, then your microphone is too loud.

Step 4: In this step Interact-AS checks the quality of your microphone (see Figure 6-4). Click on the **Start Quality Check** button to get started. Just as in the previous step, you can say anything, you do not need to read the text that is displayed in the window. As you are doing the test watch the **sound analysis window** – green is good audio and yellow indicates noisy audio. When you have completed the test you can click on the **play** button to hear a recording of what you were just saying.

Step 5: If the audio does not pass the test, then you will see a message like the one shown in Figure 6-5. Click on the **Help** button for additional information on debugging your microphone.

As always, feel free to contact the Tech Support Team at Auditory Sciences and we'll be glad to help get you *Interacting* the right way, right away.

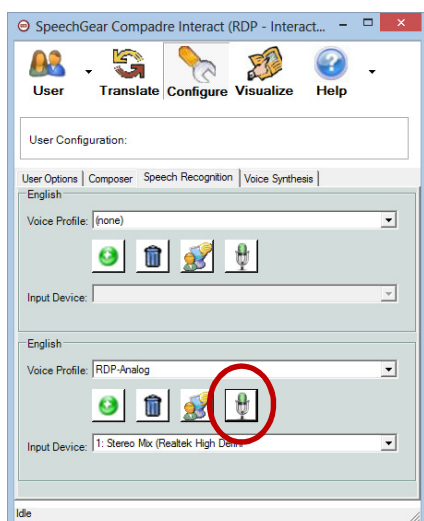


Figure 6-1 – Microphone Test



Figure 6-2 – Microphone Positioning

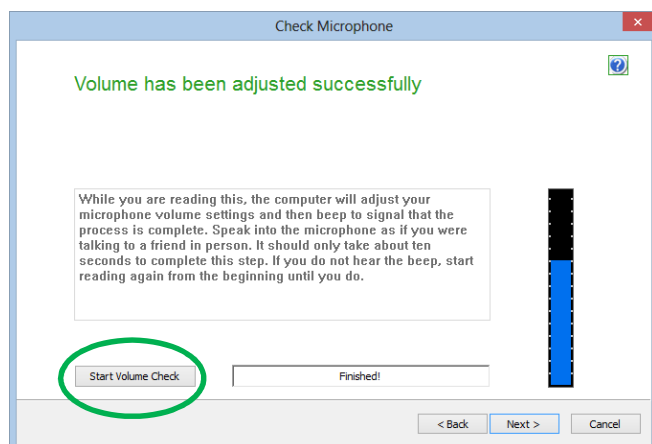


Figure 6-3 – Sound Test

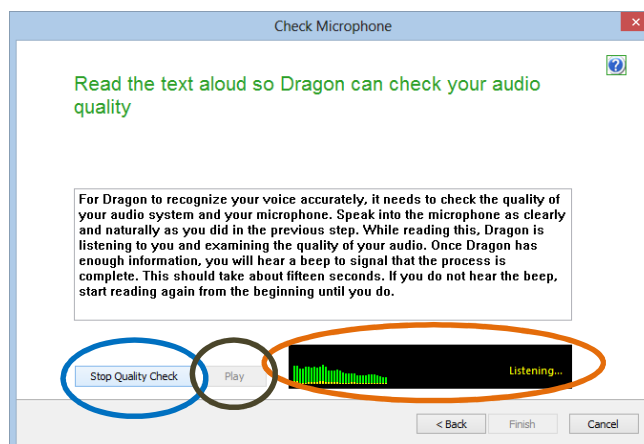


Figure 6-4 – Quality Test

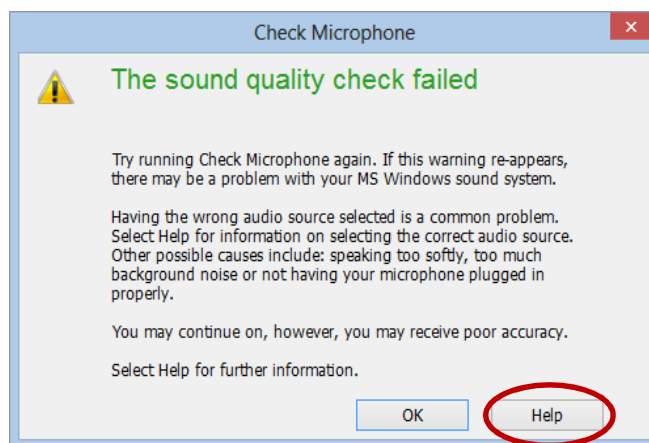


Figure 6-5 – Error Message