# Changing Audio Settings

We programmed the outdoor intercom to provide the best audio for most noisy situations but there are times where changes may need to be made. If you are putting the outdoor intercom in an environment that is always windy. We recommend you first get the optional wind screen to cover the microphone.

If you are placing the intercom directly on a wall with loud trucks driving up next to it, then the full-duplex circuitry will likely be overwhelmed by the sound wave reflections off the wall. We recommend that you experiment with the Conversation Mode first and try setting it to Robust Duplex. If that doesn't work, then switch to Half Duplex Switching.

Step 1: Set a Static IP Address on Your Windows 10 Computer

To access the web interface, your computer must be in the same subnet range as the station. There is a video about this on the config file download site you were just on.

1. Click **Start**, and type **Control** in the search field, then select **Control Panel**.
2. Click on **Network and Internet**.
3. Click on **Network and Sharing Center**.
4. On the left pane, click the **Change adapter settings** link.
5. Right-click on your computer's Ethernet network adapter and select **Properties**.
6. Select the **Internet Protocol Version 4 (TCP/IPv4)** option.
7. Click the **Properties** button.
8. Select the **Use the following IP address** option.
9. Set the **IP address** (e.g., **169.254.1.90**).
10. Set the **Subnet mask**. (e.g., **255.255.0.0**).
11. Click **OK**.
12. Click **Close** again to close the network adapter properties.
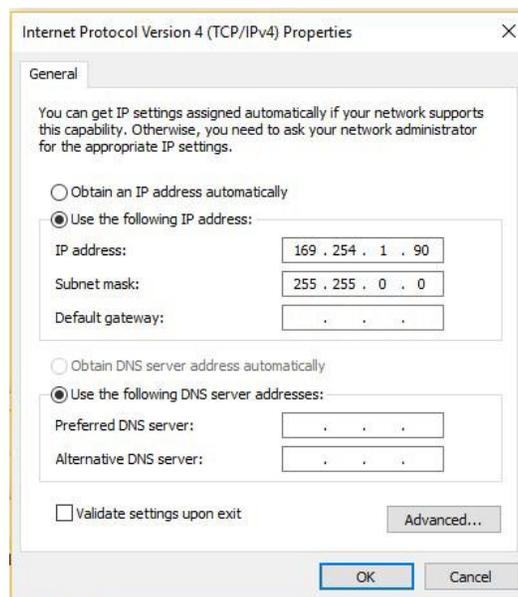
Step 2: Connect the PC, POE Switch, and Outdoor Intercom

1. Plug the PC and the ourdoor intercom likely labeled Scale 1 into the Ethernet POE switch. **DO NOT plug in the phone yet**. Make sure to turn off WiFi on your laptop if you can't access the 169.254.1.100 outdoor intercom in the steps below.

2. Allow for about 60 seconds for the outdoor intercom to boot up. The light on the Red call button will be flashing yellow.
3. Use a Firefox or Microsoft Edge browser to log in to the outdoor intercom using this IP address: 169.254.1.100.
4. Click Login and enter the default User name: **admin**
5. Enter the default Password: **alphaadmin**

Increase Volume on the Inside Phone

1. Enter the IP address of the Phone into the browser address bar. If there is only one phone the address is 169.254.1.101.
2. Enter the username and password of the phone. The default username is admin and the password is alphaadmin however, the password has most likely been changed to alphaadmin1.
3. Click on Maintenance > Device Manager.
4. Scroll down to Virtual Sound Card TX Gain (db). Experiment with the settings 3, +6, +9, +12, +15, +18. Note that raising the volume may cause a hissing noise on the phone's speaker when there is no loud noise at the outside intercom.
5. If you want to increase the headset volume change the Headset TX Gain (db).
6. Click Save.
7. Click the Reboot button on the upper right side of the screen. Click OK to approve the change.

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Adjusting the Outside Intercom for Noisy Environments

There may be situations in extremely noisy environments where the audio is still not working properly so there are other adjustments that can be made. You will need the advanced configuration mode to see these settings so follow this process:

1. Enter the IP address of the outdoor intercom (169.254.1.100) into your web browser and under **Main > Recovery** click on Advanced configuration mode and type in the password 1851
2. Put a checkmark in the box and click **Save**.

3. Click **Reload**.

Conversation Mode

To change the Conversation Mode:

1. Select the **Edge Configuration** > **Account/Call**
2. Look for Conversation Mode: and try the different settings described below.

The following Conversation Modes are available (we set the outdoor callbox to Full Open Duplex, but if that doesn't work well in your application try Robust Duplex):

- **Full Open Duplex**: Audio is always open both ways with only echo filtered out. Double-talk (both parties speak and listen) should be possible in this mode under good audio conditions.
- **Half Duplex Switching**: The loudspeaker will be muted, by software control, when speaking into the microphone.
- **Robust Duplex**: This combination turns on some half-duplex-like behavior but only if input signal is strong enough - system remains full-duplex on lower levels of mic input. This protects echo canceller from the negative effects appearing from the mic overflow and corresponding non-linearity
- **Push to Talk (this one will not work for this application)**: The loudspeaker is open, the microphone is muted. The microphone is activated when pressing the M-key (Manual control)
- **Open**: Loudspeaker and microphone is always open. There is no audio processing in the station.

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Audio Profile

1. Select the **Edge Configuration** > **Audio**
2. Under **Call Settings**, check the Audio Profile

Audio Profiles

The following Audio Profiles are available:

Normal: Standard Acoustic Echo Cancelling (AEC) Profile with a few extra filters added to try to minimize the effects on the voice-signal when operating in a standard environment and few non-linearities in the speaker-to-mic feedback signal.

Noisy Environment: Environment with high noise levels but maximum speaker level is not required.

- Enhanced Noise filter with Suppression level 20 dB
- Slow Jam detector to handle Frequency selective noises (jams) appearing in many industrial or harsh environments.
- Comfort Noise type "quiet2" to make Comfort Noise Generator (CNG) operation more natural in noisy environments

Very Noisy Environment: Extreme Environment with very high noise level and Maximum Turbine Speaker level is required. This could i.e. be a "Water Turbine Powerhouse" with a powerful ambient noise, and the "near-end talker" is required to use hearing protection.

- Enhanced Noise filter with Suppression level 20 dB
- Strong Jam detector to handle Frequency selective noises (jams) appearing in many industrial or harsh environments.
- Soft-Howling and Half-Duplex level 2

  This combination turns on some half-duplex-like behavior but only if input signal is strong enough - system remain full-duplex on lower levels of mic input. This protects echo canceller from the negative effects appearing from the mic overflow and corresponding non-linearity.

- Comfort Noise type "low" to make Comfort Noise Generator (CNG)operation more natural in noisy environments

Audio Settings

Call and Audio Settings

The **Call and Audio Settings** menu include the following parameters (try turning Automatic Gain Control (AGC) off)

- **Autoanswer**: When un-checked incoming calls will be ringing (Private mode), and has to be accepted by the user. When checked the call will connect straight through (Open mode). On stations with full keypad the user can also toggle Autoanswer on/off by pressing the C-button for 2 seconds.
- **Speaker Volume**: Sets the loudspeaker volume for the station.
- **Volume Override Level**: Sets the loudspeaker volume during volume override. Volume Override is used by Group calls with Emergency priority.
- **ANC**: Active Noise Cancellation. When enabled most of the background noise will be filtered away from the microphone signal.
- **AGC**: Automatic Gain Control. When enabled the microphone signal will automatically be amplified when speaking with a low voice or if you are far away from the station.
- **AVC**: Automatic Volume Control. When enabled the loudspeaker volume is adjusted according to the ambient noise level. The AVC will perform better if the "Speaker Volume" is set to a fairly low level, as this will give the AVC a more dynamic range for adjustments. Note that the AVC adjustment is disabled while the speaker is playing audio. Adjustments are made in silent periods (min. 100 ms silence required).
- **Accessory**: If the station model supports accessories (headset, handset etc.), you can choose the type of accessory here

Connecting an Amplified Horn Speaker

If you still don't have enough volume you can connect an external amplified horn speaker. On the back of the outdoor intercom you will find two connections that allow adding the amplified horn speaker.

Make sure to observe the polarity of the speaker wires as shown in the picture below and the horn speaker is mounted.

Connect Amplified Horn Here

Lower Volume on the Outdoor Intercom

Using this horn speaker, the volume should be decreased on the outdoor intercom, which will give better performance to the full duplex echo cancelling capability. You do this in the Call and Audio section of the outdoor intercom (169.254.1.100) programming.

Log in to the intercom using 169.254.1.100 and select **Edge Controller > System Configuration > Call and Audio Settings**. Make sure ANC or Active Noise Cancellation is checked. If you have different types of trucks arriving and some will be quiet, you may want to experiment with the Automatic Volume Control (AVC). You may get better performance with Automatic Gain Control (AGC) set to off.