



NVIDIA RTX Voice

User Guide

Document History

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v02 Beta	April 07, 2020	Minor review changes.

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Chapter 1. Introduction to the NVIDIA RTX Voice application

NVIDIA RTX™ Voice is a stand-alone application that can be used to enhance the application-specific audio. NVIDIA RTX Voice uses advanced processing techniques for real-time enhancements of incoming and/or outgoing audio streams for a user application. Currently, the application supports graphical processing unit (GPU)-based high-quality background noise suppression solution, which is based on a deep neural network (DNN).

Effective background noise suppression is important to broadcasters, audio effects processing, recordings, voice chats, telecommunications and so on. Maintaining high-quality audio, while recording or broadcasting your system is critical for audience retention.

The NVIDIA RTX Voice application has been designed to suppress the background noise in real-time for incoming and outgoing audio streams, with low impact on the system resources.

The application is designed so that the enhancements are applied to the audio input and output streams for a specific end-user application, such as Discord, Skype, Audacity. Applications that intend to enhance the audio need to be configured to capture audio from, and render audio to, the NVIDIA Virtual Audio endpoints. Since the configuration does not affect the default audio device configuration, NVIDIA RTX Voice has no impact on the system audio or audio from other applications.

Chapter 2. Hardware and Software Requirements

2.1 Hardware Requirements

NVIDIA RTX Voice is supported on the NVIDIA RTX family of GPUs, which comprises NVIDIA Turing™ and future generation GPUs.

Hardware	Required Version
NVIDIA GPU	NVIDIA® GeForce®, Quadro® and Titan versions of NVIDIA RTX (NVIDIA Turing and later) GPUs
Microphone and Speakers	Headset, microphones, and speakers

2.2 Software Requirements

NVIDIA RTX Voice requires a specific version of Windows OS and other associated software on which the application depends.

Software	Required Version
Operating System	Windows 10 and later.
NVIDIA Display Driver	410.18

Chapter 3. Installing the NVIDIA RTX Voice Application

3.1 Installation

To install the NVIDIA RTX Voice Application:

1. Download or copy the NVIDIA RTX™ Voice installer package from the directory where you initially downloaded the package.
2. Run the `setup.exe` file to install all the binaries.
This step starts the NVIDIA Installer and checks for system compatibility.
See Figure 3-1 for more information.
3. After the system compatibility check is complete, the **NVIDIA Software License Agreement** is displayed.
4. Click **Agree and Continue** to continue the installation.
5. To cancel the installation, click **Cancel**.
See Figure 3-2 for more information.
6. If you clicked **Agree and Continue**, you are taken to the **Installation** page.
See Figure 3-3 for more information.
7. Ensure that the following components are installed:
 - **NVIDIA RTX Voice Application** and the dependent binaries.
 - **NVIDIA RTX Voice driver**.See Figure 3-4 for more information.
8. To complete the installation, restart your computer.
9. After you restart, verify that the **NVIDIA RTX Voice** shortcut appears on your desktop and in the **Windows Start up** menu.
10. Verify that the **NVIDIA RTX Voice** application icon appears in Windows System Tray.

Figure 3-1. The NVIDIA installer

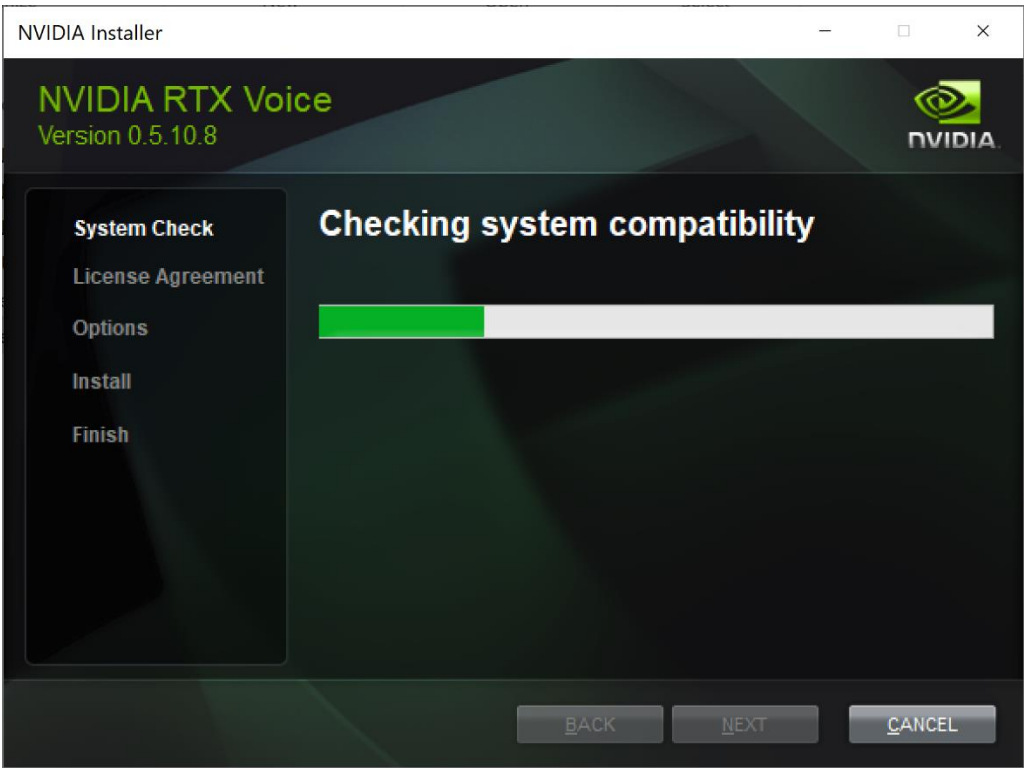


Figure 3-2. Software license agreement

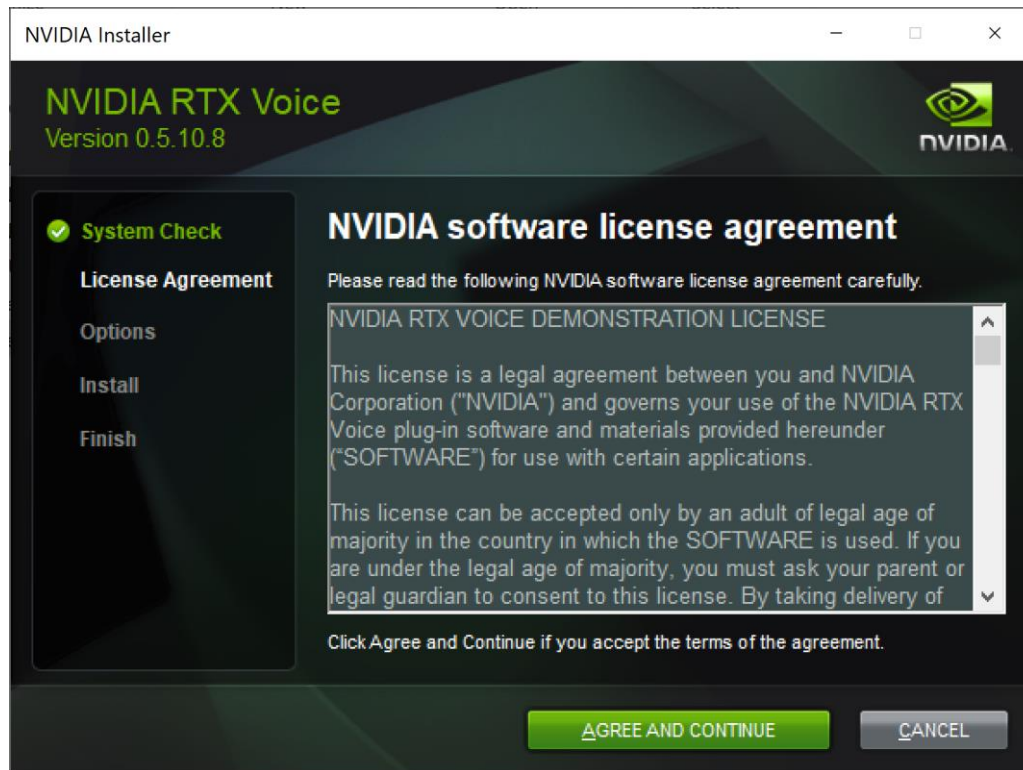


Figure 3-3. The installation process

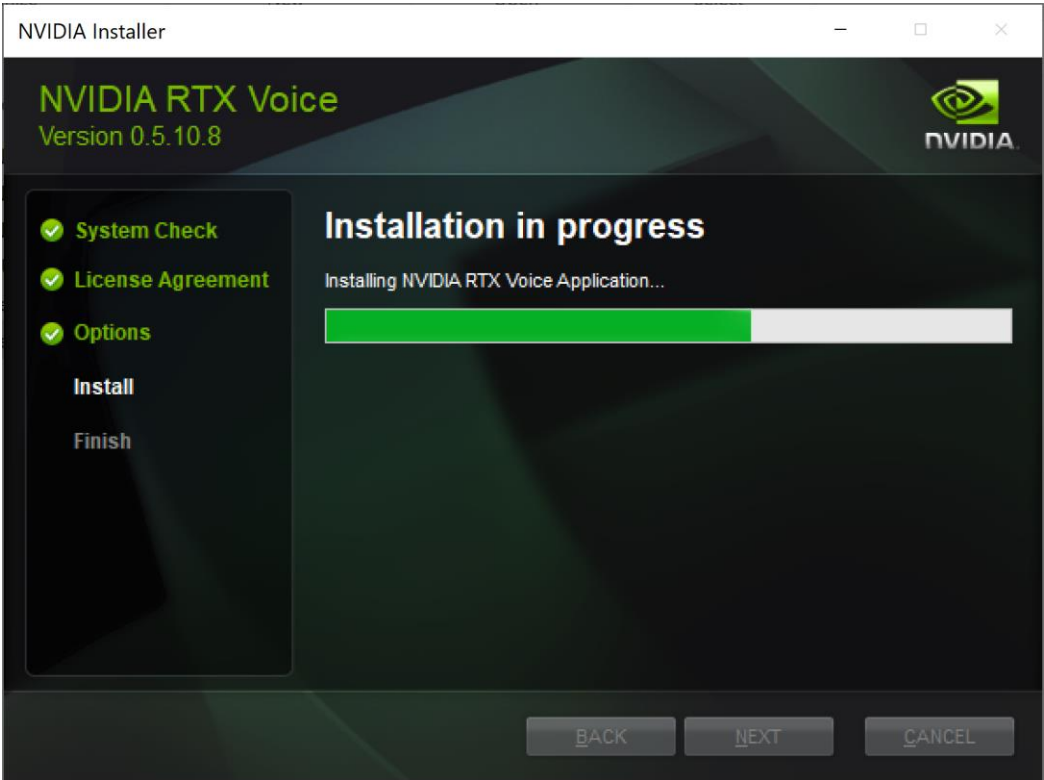
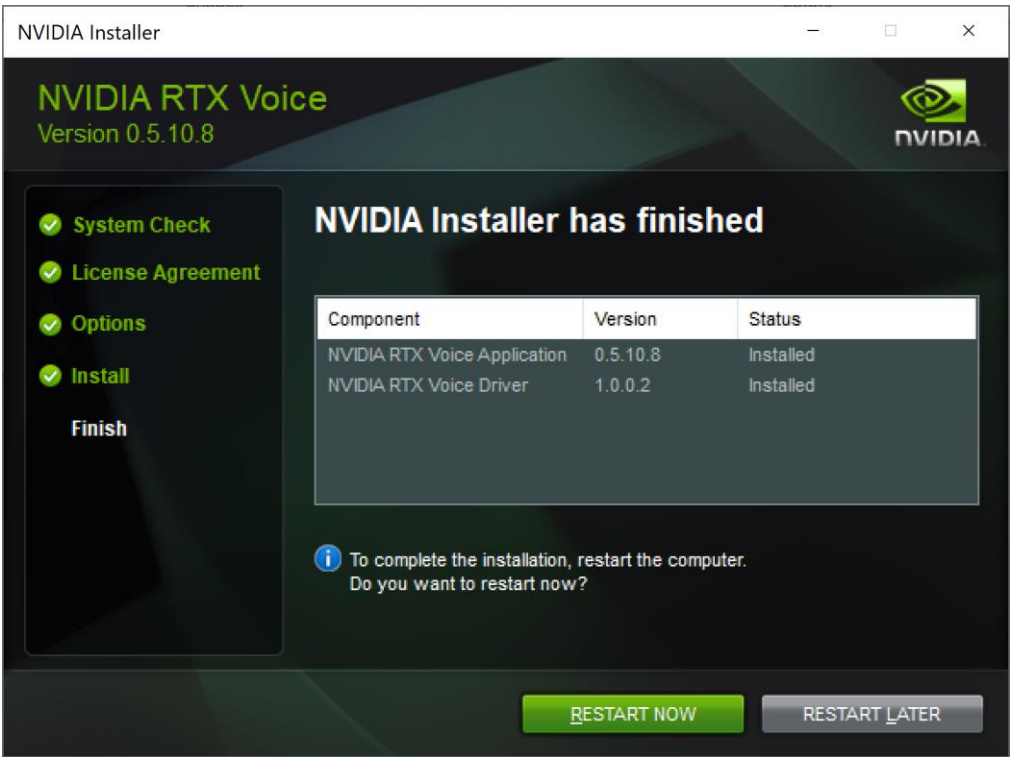


Figure 3-4. Installing the components



Chapter 4. Using NVIDIA RTX Voice

Application

You can use the NVIDIA RTX Voice application to enable or disable background noise suppression, for incoming and outgoing audio streams.

4.1 Application Usage Steps

1. To start the application, double-click the **NVIDIA RTX Voice** icon in one of the following locations:

- On your Desktop.
- In the Windows Start up menu.
- In the Windows System Tray.

This step registers the endpoints (microphone and speaker). See Figure 4-1 for more information.

2. Select **Microphone/ Speakers** from the drop-down lists and set these options as the default end points.

See Figure 4-2 for more information.

3. To enable background noise suppression, for the respective pipelines, select the **Microphone and/or Speakers** checkboxes.

You can use the sliders for each pipeline to select the strength of the background noise that will be suppressed. Sliders range between 0-100%, where 0% means the pass through (no background noise suppression) and 100% means the strongest background noise suppression. See Figure 4-2 for more information.

4. Start the Voice chat application (for example, **Discord**) and configure following devices:

- a. Select **Settings > Voice & Video > Input Device** and select **Microphone (NVIDIA RTX Voice)**.
- b. Select **Settings > Voice & Video > Output Device** and select **Speakers (NVIDIA RTX Voice)**.

See Figure 4-3 for more information.

5. Test background noise suppression for the inbound and/or outbound audio with the Voice chat application (for example, **Discord**).
6. Deselect the **Microphone or Speakers checkbox**, or both checkboxes, to disable background noise suppression, for the respective pipelines.

7. Click the **X** in the top right side of the page to minimize the application.
8. Right-click the **NVIDIA RTX Voice** icon in the system tray to restart or to close the application.

Figure 4-1. Registering the endpoints

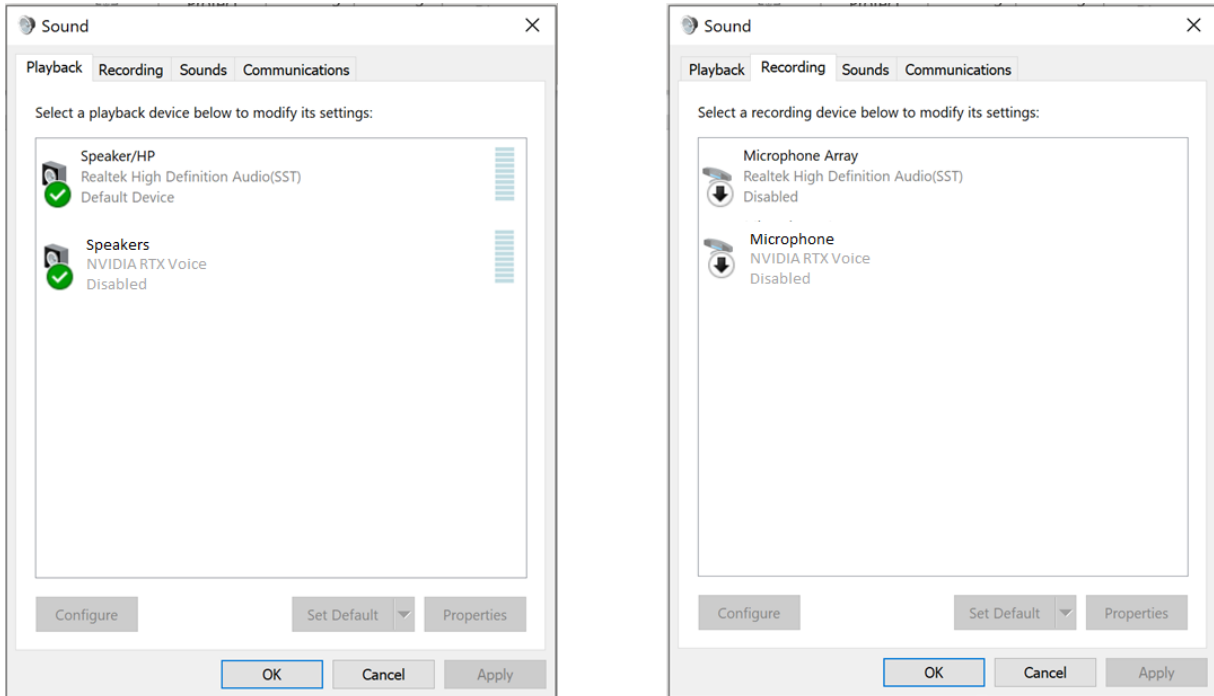


Figure 4-2. NVIDIA RTX Voice application

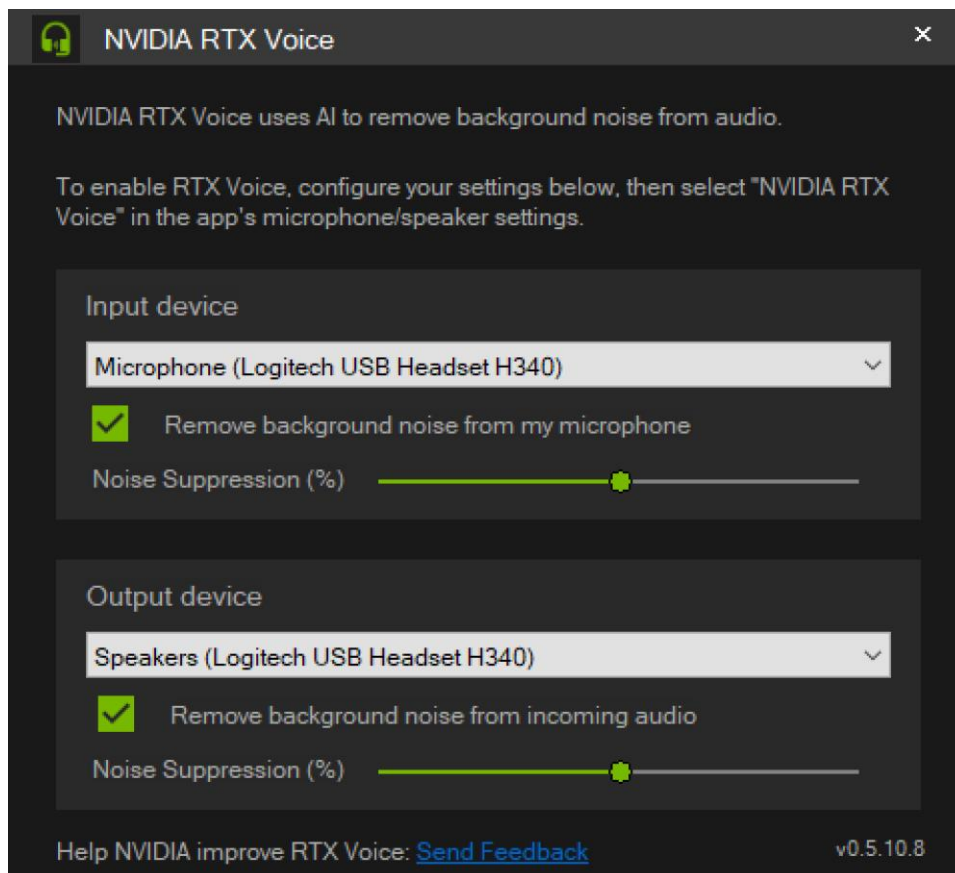
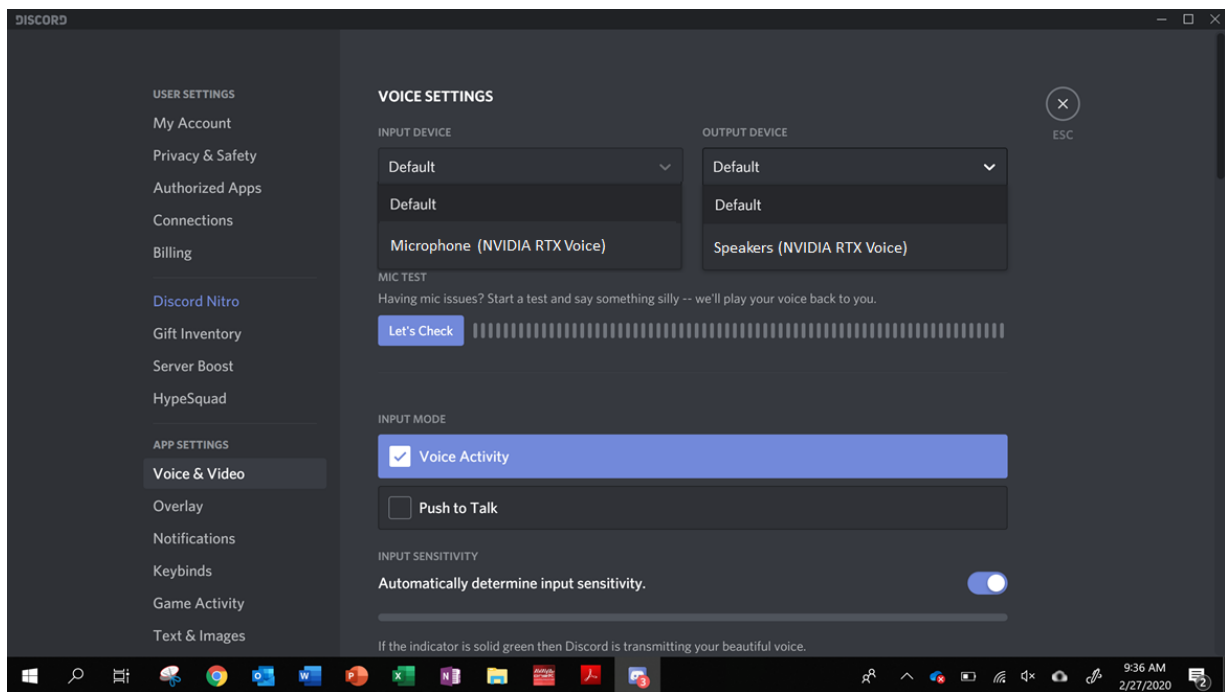


Figure 4-3. Configure devices on the Voice chat application



Chapter 5. NVIDIA RTX Voice FAQ

- ▶ I installed the NVIDIA RTX Voice application and followed the steps, but I am not getting any system audio.
 - Check whether the correct physical speaker device is selected in the drop-down list in NVIDIA RTX Voice application.
 - Check whether your audio application (Slack/ WebEx) is configured to playback on NVIDIA RTX Audio device.
- ▶ I installed the NVIDIA RTX Voice application and followed the steps, but I cannot record anything with my microphone.
 - Check whether the correct physical device is selected in the drop-down list in the NVIDIA RTX Voice application.
 - Check whether your audio application (Slack/ WebEx) is configured to playback on the NVIDIA RTX Audio device.
- ▶ I have installed the NVIDIA RTX Voice application and followed the steps. When using voice chat application, some words or syllables are getting dropped.
 - If there are default Voice Activity filters in the chat applications, disable those filters.
- ▶ I have installed the NVIDIA RTX Voice application and followed the steps. When using voice chat, I hear distorted voice (or other side hears my voice as distorted).
 - If there are default Voice Activity filters in the chat applications, disable those filters.
- ▶ Can I use NVIDIA RTX Voice for background noise suppression, on my noisy audio recordings?
 - Play your noisy audio through a media player with the playback audio device selected as the NVIDIA RTX Audio device.
- ▶ I have installed the NVIDIA RTX Voice application. Where can I find the EULA/ Third Party Licenses on my machine?
 - You can find the EULA.pdf and ThirdPartyLicenses.txt file in the `C:\Program Files\NVIDIA Corporation\NVIDIA RTX Voice` **directory**.
- ▶ Can I install and run NVIDIA RTX Voice application on other portable devices like a laptop?
 - Yes, you can install and run the NVIDIA RTX Voice application on your RTX-capable laptop. However, this application is not optimized for MS Hybrid notebooks, so the battery life might be reduced when you run the application.

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