



# **THE LATEST IN HEARING ASSISTANCE TECHNOLOGY**



## INTRODUCTION AND SUMMARY

- Review the latest devices and smartphone app's that benefit people with a hearing loss

# ASSISTIVE LISTENING DEVICES

- OPTIONAL MICROPHONES



Williams Sound Omnidirectional Conference Microphone

# ASSISTIVE LISTENING DEVICES

- OPTIONAL MICROPHONES



Williams Sound "Shotgun" Hand-Held Directional Microphone

# HEARING ASSIST APPS

## THE SMARTPHONE AS AN ALD

FOR SMARTPHONE, TABLET, PC

PROGRAM, APPLICATION, APP (call it an App for our discussion)

LISTEN TO MUSIC OR PODCASTS, MAKE CALLS

MANY APPS ARE FREE

DOWNLOAD FROM GOOGLE PLAY, APPLE STORE - SAFETY

APPS ARE OFTEN FOR ONE SPECIFIC PLATFORM

APPS SHOWN ARE JUST EXAMPLES – NO HLAA CERTIFICATION

- There may be an App that will help you to hear better when listening on the device. We will look at just a few examples.
- App is one term. It is essentially a Computer Program or Computer Application, with some different considerations. And your device is basically a computer. I'll just refer to them all as Apps for this presentation.
- There are apps that might be helpful when you listen to music, podcasts, or make calls on your device.
- Install is effortless, just press the 'install' button on the website
- Some apps are free, some have a one-time payment, and some are subscription based.
- Be careful when selecting an app. Stick to Google Play Store (Android) or Apple Store (iOS). Also look for a known provider e.g. Samsung for a Samsung phone, if possible, the user rating, and a large number of downloads
- Some Apps work only on Android phones and tablets, some only on Apple iOS devices, and some are made to work on both
- Our chapter does not endorse any app, in particular, but we can tell you which ones we, as individuals, like personally.

## HEARING ASSIST APPS SOME TYPES

- APP CONTROL FOR HEARING AIDS
- HEARING ENHANCEMENT
- CAPTIONING or STT
- HEARING ASSESSMENT\*
- MISCELLANEOUS

\*NOT EQUIVALENT TO EXAM BY A HEARING PROFESSIONAL

Most hearing aid manufacturers provide Apps that enable you to use your smartphone or tablet to adjust your hearing aid volume, microphone directional focus, hearing aid program, etc.

Other common App types are Hearing Enhancement and Captioning (a.k.a speech-to-text) – live or automated

There are also miscellaneous hearing-related apps.

Two that I use are Sound Meter and Tone Generator. These are not hearing assist apps but they have related functionality that may be useful at times.

# APP CONTROL FOR HEARING AIDS EXAMPLE: SIGNIA



This example is specific to Signia hearing aids...not sure which release.

The left image illustrates controls for selecting the program, volume, and putting the hearing aids on mute.

The right image, the Spatial Configurator, enables the user to set where to focus the microphones: from 360 degrees all the way down to a narrow focus to the front.

# HEARING ENHANCEMENT

- FREQUENCY BOOSTING
- EQUALIZER FUNCTION
- SOUND AMPLIFIER
- PICK UP EXTERNAL SOUNDS

Check if any can do noise cancellation or other function.

Let's look at a couple hearing enhancement App types.

As an example, many of us have a high frequency hearing loss. Our hearing aids compensate by boosting frequencies that we do not hear so well.

An App can boost frequencies when listening to audio on your device. These Apps are commonly called 'Equalizer Apps'.

Another type of App can use the microphone on your device to pick up sounds and amplify them through the device speaker or connected headphones or a neckloop.



# HEARING ENHANCEMENT

## EXAMPLE: EQUALIZER FX

- FREQUENCY BOOST
- USER ADJUSTMENT
- ANDROID, iOS
- FREE



Here is one example of an Equalizer App that works on both Android and iOS devices.

More relevant to people who do not wear hearing aids but have some hearing loss.

You can see on the image that it can selectively boost 5 separate frequency ranges, as set by the user.

This example shows a higher boost on the lower and upper frequencies and less of a boost in the middle frequency range. This just a stock picture and does not represent how it would be set for high frequency hearing loss, but it give you the idea.

Each of those ranges can be adjusted by holding your finger on the dot and moving it up or down.

Let's look a little closer at the App (click on the link)

# HEARING ENHANCEMENT

## EXAMPLE: EQUALIZER APO

- FREQUENCY BOOST
- USER ADJUSTMENT
- WINDOWS
- FREE



Windows  
free

This is an example of 'Equalizer APO' which works only on the Windows Operating System.

You can see that there is a much finer grained control over the frequencies to be boosted.

The image shows how I have it adjusted on my PC to compensate for my hearing loss.

I use this application for internet phone calls, using Google Hangouts, as well as listening to music and podcasts – but mostly for internet phone calls.

Making calls on my pc gives me the advantage of using a stereo headset so that I can hear the call in both ears (mono, of course). I hear more clearly with this set up than if I was using just my hearing aids with a standard smartphone. But that is just MY experience. Results may vary.

This is a Windows 'application', not an App. So you cannot find it in the Google Play Store or the Apple Store. Search for "Equalizer APO" and 'Peace Equalizer' on the web and install both from [sourceforge.net](http://sourceforge.net).

# HEARING ENHANCEMENT

EXAMPLE: SONICCLOUD

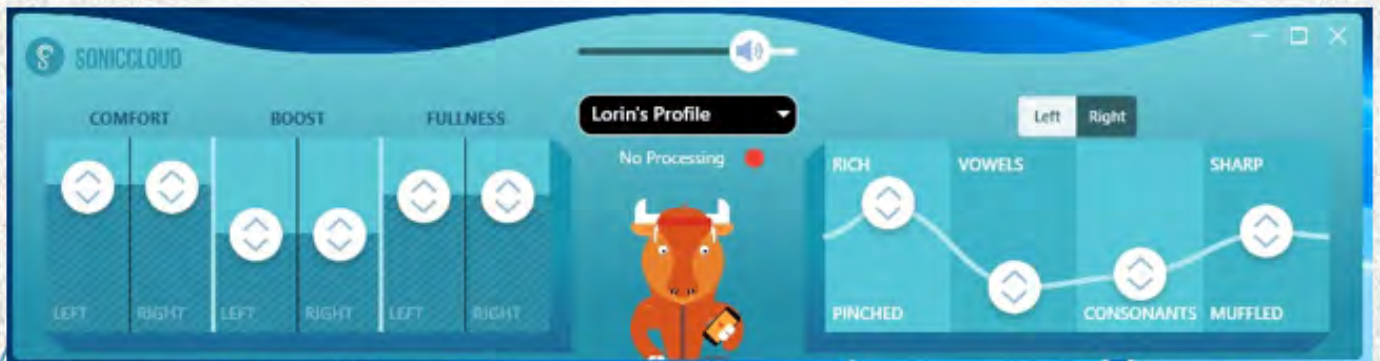
- PROVIDES A HEARING TEST
- AUTOMATICALLY ADJUSTS FREQUENCY BOOST
- PROVIDES CONTROLS FOR FINE TUNING
- SUPPORTS STREAMING TO BT DEVICES
- ANDROID, iOS, MAC OS, WINDOWS (FUTURE)
- MONTHLY SUBSCRIPTION

•SonicCloud is an app that appeared in 2017. It goes beyond the usual, manually adjusted Equalizers. The app administers a hearing test to the user and then uses that hearing profile to set the equalizer controls.

•The app also enables the user to do fine tuning while listening to speech or music. It uses intuitive slider controls rather than simple frequency ranges as you will see in the next slide.

# HEARING ENHANCEMENT

EXAMPLE: SONICCLOUD



Volume can be adjusted using the slider at the top.

Audio to each ear can be adjusted individually for the characteristics of: Comfort, Boost, Fullness, Richness vs Pinched, Vowels, Consonants, and Sharp vs Muffled sound.

Multiple profiles can be stored. One might be better for speech, one for music, etc.

# HEARING ENHANCEMENT SOUND AMPLIFIERS

- PHONE'S INTERNAL MICROPHONE AS INPUT
- CAN ALSO PLUG IN AN EXTERNAL MIC
- EXAMPLES:
  - GOOGLE SOUND AMPLIFIER FOR ANDROID
  - LIVE LISTEN FOR IPHONE

These Apps use either the internal device microphone of the phone or tablet to pick up someone speaking, or music, or other sounds and uses the phone to amplify the sound to the user through the devices speaker, a headset, ear buds, or a neck loop.

# HEARING ENHANCEMENT NEXT STEP: HARDWARE + APPS

- 'BEHEAR NOW' HEADSET'

- SELF-POWERED EARBUD HEADSET
- APP RUNS ON USER DEVICE
- HEARING ASSESSMENT VIA BT
- LOADS PROFILE INTO EARBUDS
- PHONE CALLS, STREAMING, AMBIENT
- TV STEAMER COMPANION PRODUCT



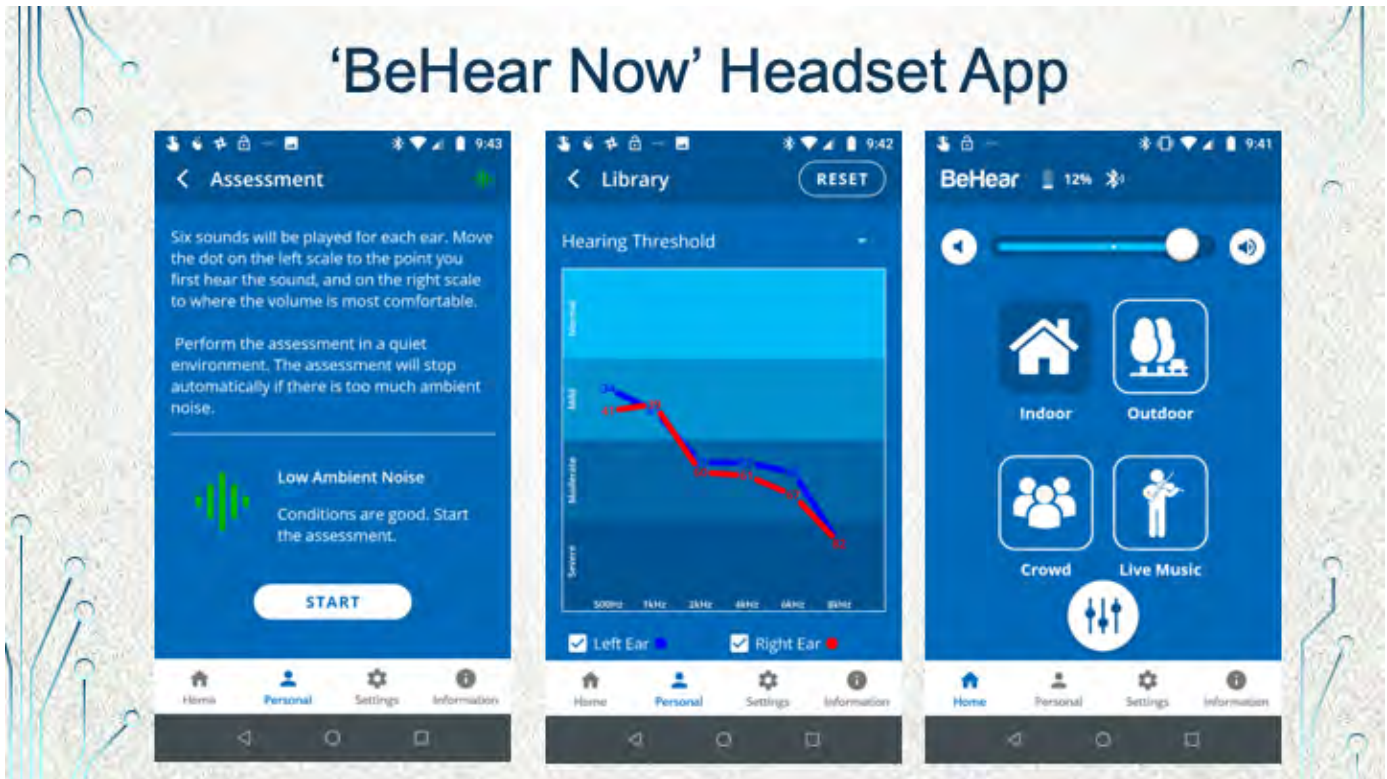
- OTOJOY LOOPBUDS

- FOR LOOP LISTENING
- IT IS A PAIR OF EARBUDS
- BUT ALSO HAS A T-COIL
- REQUIRES USER DEVICE TO AMPLIFY
- NORMAL EARBUDS FUNCTIONALITY



- We already looked at two type of Assistive Listening Devices: hardware devices, such as the Pocketalker and Apps that help you hear better on your smart phone, tablet, or PC.
  - Over the last few years we have seen the introduction of a third type: Hardware Plus Apps.
  - That is, two components work together to implement the ALD.
- (WALK THROUGH THE BULLETS)

## 'BeHear Now' Headset App



This slide shows some screenshots of the companion App to the headset as seen on my smart phone.

You can see from the image on the left that the App will run a hearing test to determine, for you, which frequency ranges need additional amplification.

The middle image shows the result of my hearing test. The values shown are automatically downloaded from the App to the headset. Now the headset will operate independently of the App and will provide a boost where necessary.

The right-hand image illustrates the various noise suppression settings of the App.

One feature not shown is speech slow down. This may be helpful when listening to voice mail from a fast talker.

# CALL CAPTIONING APPS

## EXAMPLES

- CaptionCall Mobile
  - CaptionCall registration
  - iPad
- ClearCaptions Mobile
  - ClearCaptions registration
  - iOS, Android("coming soon")
- Hamilton CapTel Mobile
  - CapTel registration
  - Android, iOS phones
- InnoCaption
  - InnoCaption registration
  - Android, iOS phones

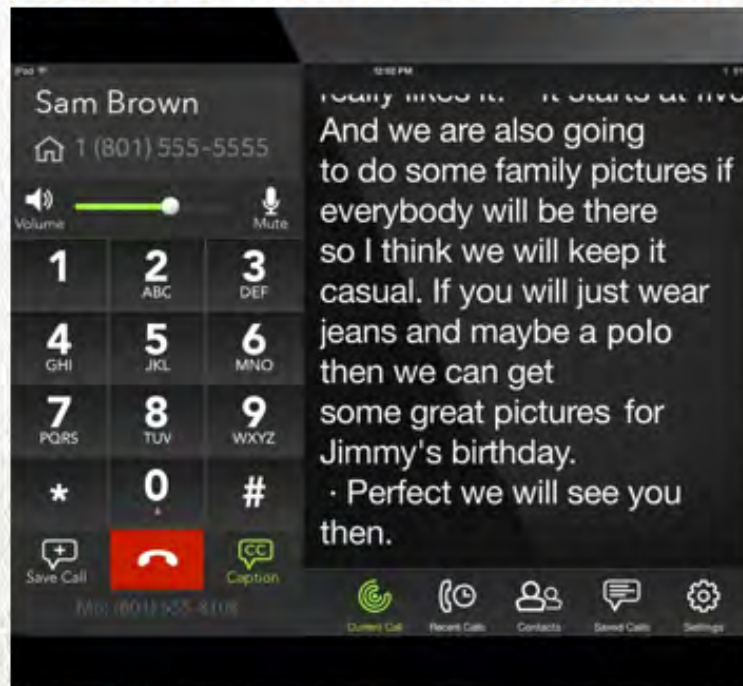
Call Caption phones are a great help but the user is tied to a location. Call Caption Apps enable the user to have captioned calls from any location.

Like the Caption Phones, the Apps must be registered.



# CALL CAPTIONING APPS

## EXAMPLE: CAPTIONCALL MOBILE ON IPAD



This is an example of the CaptionCall Mobile App on an iPad.

From the CaptionCall website: “CaptionCall Mobile requires a CaptionCall account, an Apple® iPad® 2 or later, and a Wi-Fi or cellular Internet connection.”

Also from the Caption Call website: “There is a cost for each minute of captions generated, paid from a federally administered fund. No costs are passed along to individuals who qualify for the service.”

# PERSONAL CAPTIONING APPS

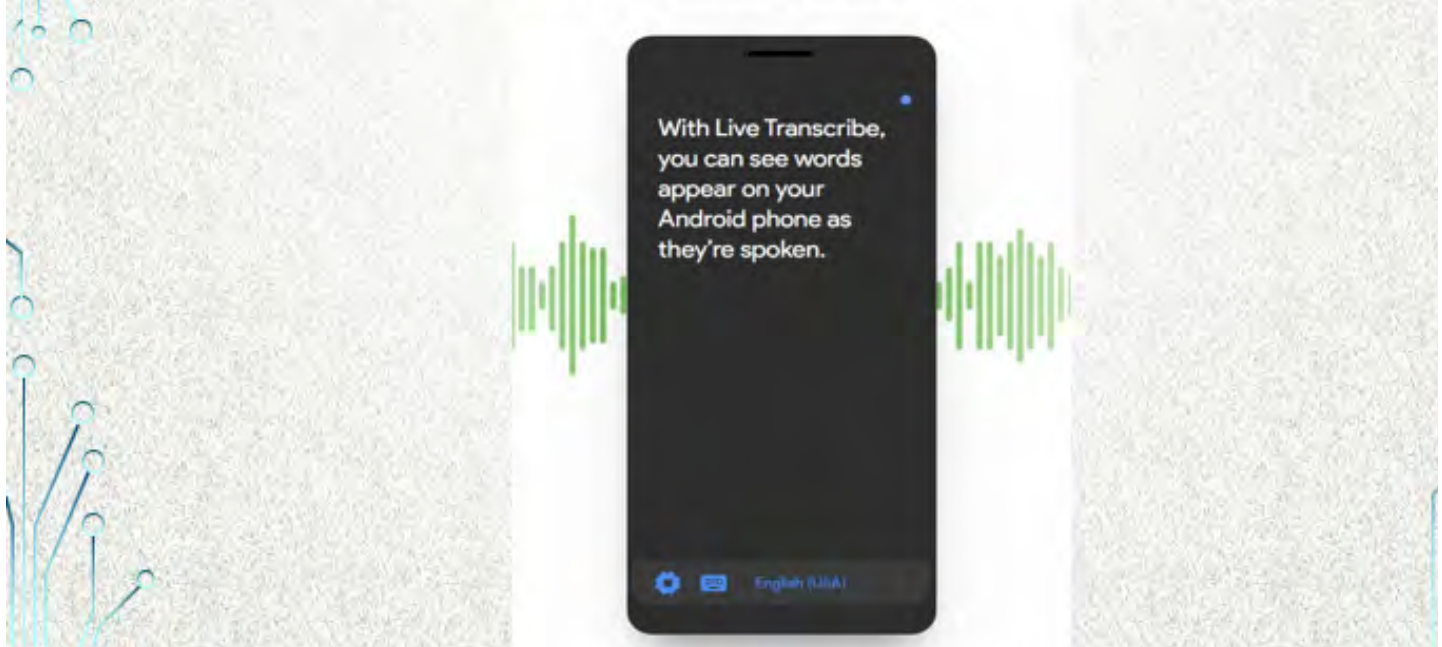
## EXAMPLES

- APPLE – SIRI TRANSCRIPTION (IOS)
- [GOOGLE LIVE TRANSCRIBE](#) (ANDROID)
- MICROSOFT TRANSLATOR (WIN, ANDROID)
- [TEXT-HEAR PERSONAL](#) (IOS, ANDROID)
- AVA – FOR GROUP CONVERSATIONS
- MANY, MANY MORE

- Personal Captioning Apps can be useful in private conversations. I have not used Apple's Transcriptions App
- Google Live Transcribe is for Android. Seems to work well. I think it has just recently included an option to save the transcript. The next slide has a screenshot.
- Microsoft Translator runs on Windows and Android...not sure about iOS. A slide follows for this one as well.
- AVA is a transcription app for group conversations. Each person in the group would have installed AVA on their smart phone. Anyone can invite others to the conversation. Each speaker's transcribed speech appears on all the phones with an identifier of who spoke.
- There are a lot of other personal captioning apps, at least in the Google Play Store. I'm not sure about the Apple Store.

# PERSONAL CAPTIONING APPS

## EXAMPLE: Google LiveTranscribe



This is how the transcribed text would appear on a smartphone. As you speak, the text will be transcribed in real time and show up on the display.

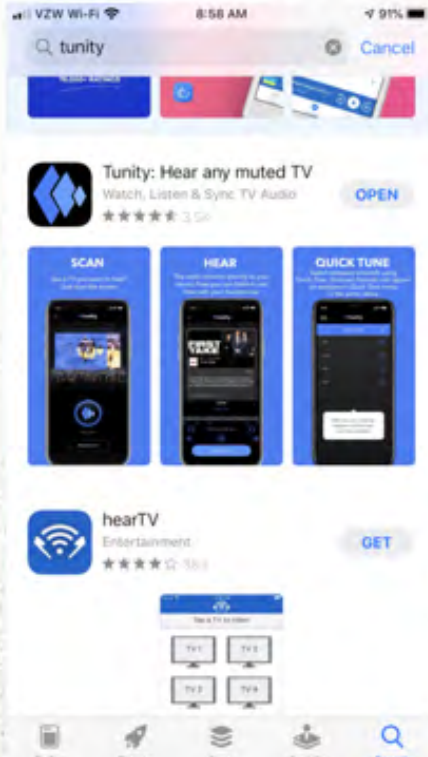
# PERSONAL CAPTIONING APPS

## EXAMPLE: MICROSOFT TRANSLATOR

- TRANSLATES 60 LANGUAGES
- USE WITH WINDOWS INK
- TEXT, SPEECH, OR INK TRANSLATION
- CONVERSATIONS ACROSS MULTIPLE DEVICES (~AVA)
- INTEGRATES WITH CORTANA
  
- RIT/NTID PRODUCED VIDEOS THE APP

- Translates 60 languages. You can just default to English-English.
- Displays your speech in text form on the screen.
- Can also type or write on touch screen.
- You can invite one or more people to a conversation, similar to the AVA app.
- I installed it on my Windows pc and Android phone but used it just briefly, so far.
- Integrates with Cortana. Not sure exactly how that works or how you use it.
  
- I found three RIT/National Technical Institute for the Deaf videos about using Microsoft Translator. See the link.

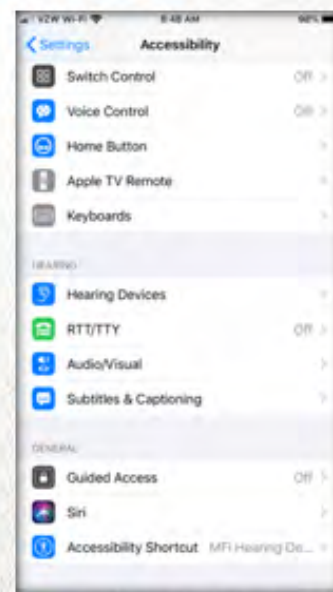
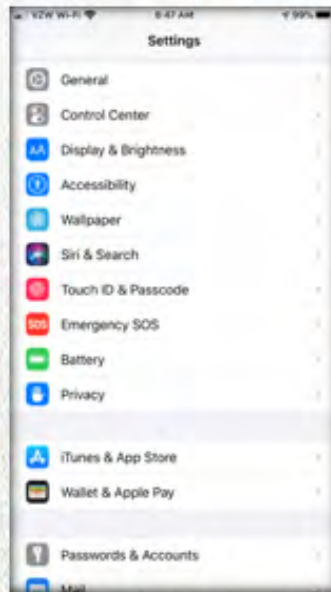
# Tunity TV APP



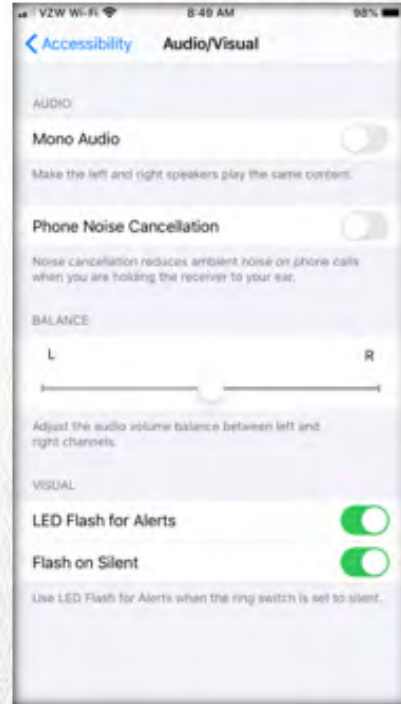
# Tunity TV APP



# iPHONE [IOS] ACCESSIBILITY FEATURES

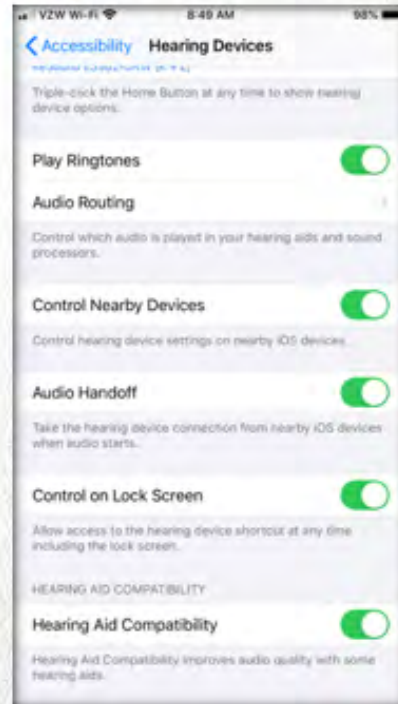
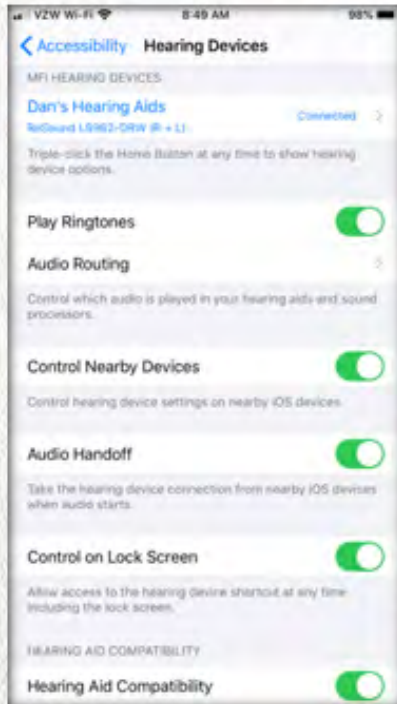


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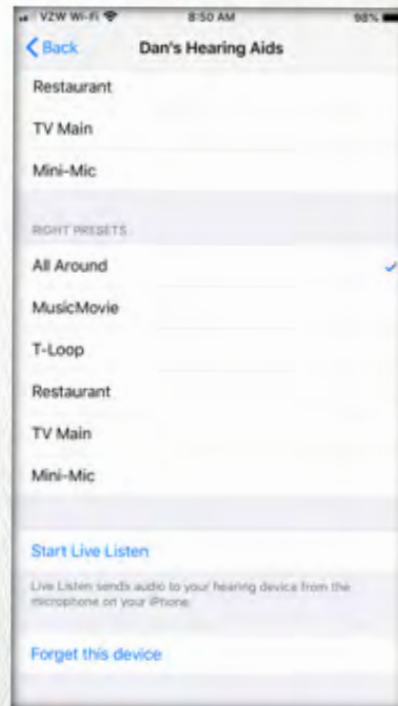
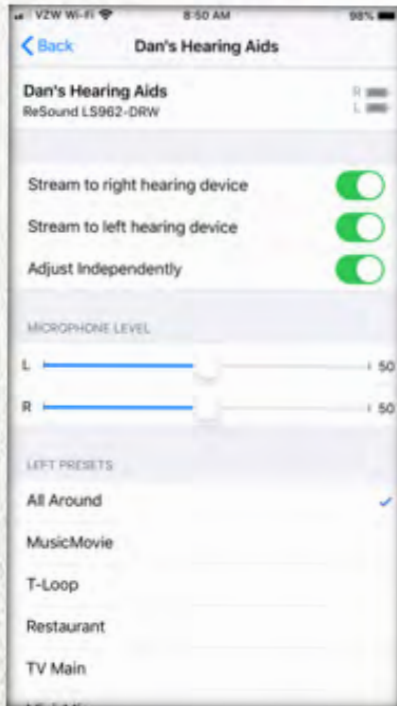




# iPHONE [IOS] ACCESSIBILITY FEATURES



# iPHONE [IOS] ACCESSIBILITY FEATURES





# ANDROID ACCESSIBILITY FEATURES

- LIVE TRANSCRIBE – DISPLAY SPEECH AS TEXT ON SCREEN
- MONO AUDIO – COMBINE CHANNELS WHEN PLAYING AUDIO

# HEARING AID COMPATIBILITY FOR PHONES

•IF YOU ARE CONSIDERING A NEW PHONE CHECK RATINGS

•*The Hearing Aid Compatibility Act and other federal laws require the Federal Communications Commission to ensure the availability of wireline and wireless telephones that are compatible with hearing aids and cochlear implants.*

•**SEE THE WEBSITE:**

<https://www.fcc.gov/consumers/guides/hearing-aid-compatibility-wireline-and-wireless-telephones>

- If you are in the market for a wireline or wireless phone, an important step is to check the phone's compatibility with hearing aids.
- The Hearing Aid Compatibility Act and other federal laws specify performance requirements for performance using the hearing aid/cochlear implant's microphone as well as the Telecoil.
- The ratings run from M1-M4 and T1-T4, with a higher number being better.
- I found my phone's rating on the manufacturer's website (Motorola)



This is a partial screenshot from the VDC web page. It's all that would fit.

My intent is to follow the link at the top if there is time and walk through a couple links to illustrate the use of audio and video to explain some of the products.