

# Unlocking your radio aid's potential

**Tony Murphy** outlines some strategies to support cabled connectivity

## Introduction

Traditionally, radio aids have been used for communicating at a distance or in noise. However, the modern teaching environment or daily life in general is more complex, if you consider the average day of a child and how many times they need to use some form of electronic device. This could be a TV, or a mobile phone on the way to school. At school, virtually all curriculum activities will involve some kind of electronic medium: interactive whiteboards, PCs, tablets or musical instruments. At the same time, they still need to communicate with the teacher or classmates as they work interactively with different groups and in challenging situations.

Increasingly they also have to work remotely, utilising various PCs, or online packages. Of course education does not finish in the classroom, so family activities or social mixing with friends are equally important for a child's development.

The latest hearing aids offer many formats for interconnectivity: multiple Bluetooth connectivity options and radio aids. T-coil is often forgotten, especially for the school environment, as the signal quality and interference issues do not make it ideal for young children at school. However, it is still the only truly universal wireless technology, so it should, in some specialist circumstances, be considered. It is too complex to discuss every technology type in one article, so I will concentrate on the direct connectivity, or hard-wired radio aid connectivity. The benefit of these solutions is that they tend to be more reliable, and although not fully immune, they will be less prone to interference. There is obviously a huge array of different devices, but the physical connections can be simplified into some basic concepts that can be used to solve the majority of issues.

Firstly, consider what you are trying to do. Audio connections are either inputs or outputs, commonly termed 'audio in' or 'audio out'. If you want to send information from one piece of equipment to another, you need to connect the audio out to an audio in. These are labelled, so they are relatively simple to find. PCs used to have separate inputs and output connections: the mic, or input, labelled usually with a green ring. The output was the headphone socket, labelled with a pink ring. You can still see this on some desktop PCs. Most laptops now only have one socket labelled with a headphone symbol. This signifies audio out and generally, it is this connection that will be used to connect directly into a radio aid. The same principle will also apply for tablets or smartphones. Even though some no longer have headphone sockets as standard, you can still use an adapter to do this.

If you wish to connect to a white board and a radio at the same time, you can use an adapter called a splitter. These are common items and there are many sources, but you cannot always guarantee their performance. However,

Connevens evaluates everything they sell, so they should be more reliable. Some whiteboards may not use traditional 3.5mm audio leads. They may use HDMI leads or USB connections. This may seem to be more complicated but the principles of connection are the same.

There are adapters for these also. You may need to consult your IT department as to the best options, but they are relatively inexpensive to purchase. They will have a HDMI input and output, so you can connect it in-between the laptop and the whiteboard, but it will also have a 3.5mm output that can be used for the input into a radio aid. If you have a USB connection it is the same principle but the adapter will have USB Connection and a 3.5mm audio out socket for connection to a radio aid.

## Links to adapters



### 1. Standard audio lead 3.5mm audio lead

<https://www.connevens.co.uk/product/4833161/MX190251/Precision-3-5mm-stereo-jack-lead-1-5m>



### 2. Audio splitter

Stereo 3.5mm plug to two stereo 3.5mm sockets

<https://www.connevens.co.uk/product/2898/MXF387/Stereo-3-5mm-plug-to-two-stereo-3-5mm-sockets>



### 3. RCA

0.2m lead with two RCA phono plugs to 3.5mm stereo socket adaptor

<https://www.connevens.co.uk/product/5023594/MX112070/2-RCA-phono-to-3-5mm-stereo-socket-adaptor---0-2m>



### 4. USB

External USB audio adapter sound card with one 3.5mm aux TRRS Jack

[https://www.amazon.co.uk/TROND-External-Adapter-Integrated-Microphone/dp/B07L56C28R/ref=sr\\_1\\_5?adgrpid=87521180316&dchild=1&gclid=EALaQobChMIg9O44brU7AlVmk3tCh3JzQQIEAAYASAAEgKBM\\_D\\_BwE&hvadid=408163842647&hvdev=c&hvlocphy=1007200&hvnetw=g&hvqmt=e&hvrnd=15644129564963466798&hvtargid=kwd-5885993251&hydadcr=4178\\_1794987&keywords=3.5mm+jack+to+usb&qid=1603790938&sr=8-5&tag=googhydr-21](https://www.amazon.co.uk/TROND-External-Adapter-Integrated-Microphone/dp/B07L56C28R/ref=sr_1_5?adgrpid=87521180316&dchild=1&gclid=EALaQobChMIg9O44brU7AlVmk3tCh3JzQQIEAAYASAAEgKBM_D_BwE&hvadid=408163842647&hvdev=c&hvlocphy=1007200&hvnetw=g&hvqmt=e&hvrnd=15644129564963466798&hvtargid=kwd-5885993251&hydadcr=4178_1794987&keywords=3.5mm+jack+to+usb&qid=1603790938&sr=8-5&tag=googhydr-21)



## 5. HDMI

Allows you to extract an analogue audio signal from a digital HDMI input, particularly useful for connecting a radio aid transmitter to a classroom whiteboard, where the connection to the computer is via HDMI

<https://www.connevans.co.uk/product/25407157/93ACONV2/HDMI-Digital-to-Analogue-Audio-Extractor---Leads>

There are situations where you may wish to have multiple people communicating via a radio aid. If you have spare transmitters you can also connect these in a network with the transmitter that you are using to connect to the computer. Hence, the child can simultaneously listen to anything from the original transmitter and also anything from the other transmitters in that network. This includes: Digimaster Soundfield, Pass Around Mic, Media Hubs, Base Station, Touchscreen or Inspiro (Premium or Roger only). If necessary you could have up to 35 different transmitters in this network. Your options are essentially unlimited. You could use this arrangement for halls or school plays, if they have a large number of transmitters available. The network is also fully automated so it works via voice activation. We often use this arrangement for conferences to improve audience participation for questions and answers. This is more inclusive in general, but it is also particularly relevant for anyone with a hearing-related need.

Communication does not totally rely on one sense and no technology is perfect. It may be a drop in concentration or poor lighting that limits lip reading. There may be additional needs such as visual impairment. In this scenario, some method of recording the lecture is incredibly useful. There are many ways of achieving this. New PCs also have automatic voice transcription; Windows Speech Recognition Cortana or Mac Catalina work well. This can also be used on a smartphone or iPad, so it is a versatile solution.

## Links to voice recognition programs

### On Mac

[https://www.youtube.com/watch?v=\\_Obpv14kD3I](https://www.youtube.com/watch?v=_Obpv14kD3I)

### On PC

<https://www.youtube.com/watch?v=8f9i7NUjeWM>

The question is how do you integrate this into a radio network? Interestingly, the headphone socket on most

modern laptops can be configured as a mic or external input socket. You can use this to send information from a radio aid. This may seem counterintuitive, but it is relatively straightforward. If you only have one transmitter (Touchscreen only) and you only wish to record audio on an existing training material, you can simply change the audio setting from audio in, to audio out and use the Touchscreen as a wired microphone.



[https://www.phonakpro.com/content/dam/phonakpro/gc\\_hq/en/products\\_solutions/wireless\\_accessories/roger\\_touchscreen\\_mic/documents/user\\_guide\\_roger\\_touchscreen\\_mic\\_029-3222.pdf](https://www.phonakpro.com/content/dam/phonakpro/gc_hq/en/products_solutions/wireless_accessories/roger_touchscreen_mic/documents/user_guide_roger_touchscreen_mic_029-3222.pdf)  
(Section 16.7 Audio Settings)

If you wish to record voice, in a more complex situation you can also input the transmitter into a PC as part of a network. You will need a Mylink or MLxS Checker with a Roger receiver. The MyLink or checker have a headphone output and it is this that can be used to enable recording information from the transmitter. If you have additional Touchscreens or Inspiro (Premium or Roger), the transmitter can also be linked to any other transmitter in that network. As a result, you can record automatically any other person using another transmitter in that network. This can then be saved in your preferred format, and used as a useful transcription for a remote lecture or from a classroom situation.

Please note the headphone output from the Mylink or MLxS checker is 2.5mm, so you will also need a 2.5mm to 3.5mm adapter

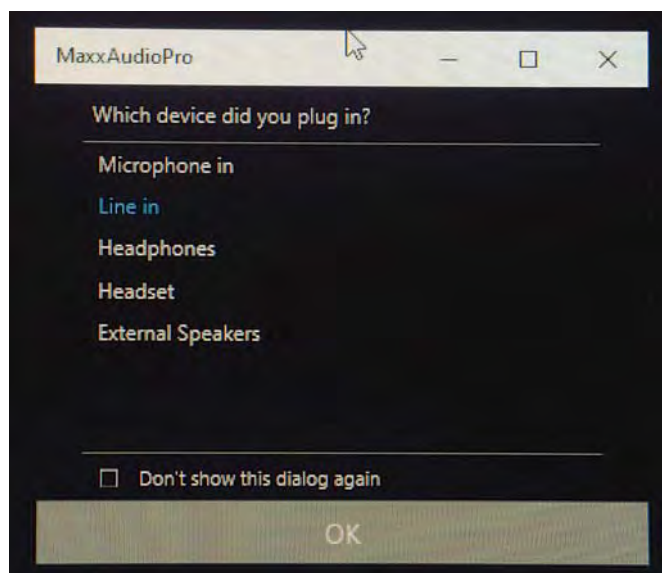
## Connevans link

<https://www.connevans.co.uk/product/1016465/X35S25/3-5mm-to-2-5mm-stereo-audio-lead---1-5m>

Whilst this short article cannot cover every model of audio visual equipment, if you follow the basic principles of input and output connections, whatever technology or physical connections that are needed can be broken down into their constituent parts and hopefully utilise the full potential of the technology that in many cases you may already have.

## Troubleshooting

If you are concerned that this system does not seem to be working, you can also test the output of the PC with a set of headphones to see if the sound is present. Or if you wish to check if the sound is coming from the network you are trying to record, you can use the Mylink or MLx Checker.



OC audio settings

If you are experiencing issues with the headphone output, it is usually that the volume of the PC or smartphone is too low, as the radio aid needs a certain level of input to switch on.

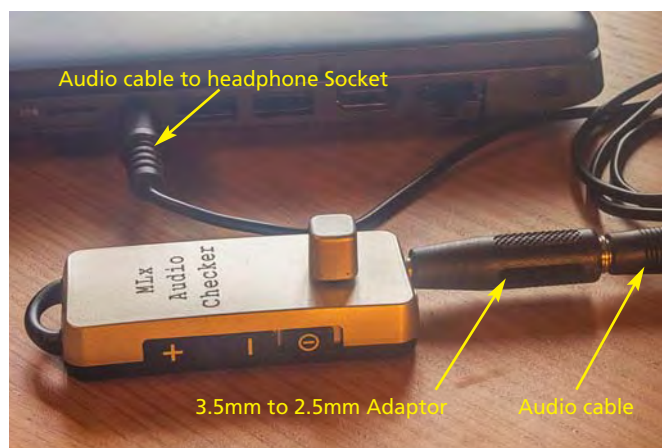
As PCs have multiple outputs, it may be that the sound is defaulting to another output and not the headphone socket, particularly if the laptop has just been used with something else recently. You can check this in the 'Sound Settings' of the PC.

### Link to PC sound settings

<https://www.youtube.com/watch?v=ko1A1qcqWWQ>

When you plug in your audio lead to the PC, it should ask what you want to do. In this case it recognises an audio input or 'Line in':

### Audio input for voice transcription via Roger



How to connect to PC

### Conclusion

This article cannot cover all the possible interactions that you may come across in the home or in the classroom. Hopefully, it is helpful in addressing the majority of scenarios. There is also no guarantee that all connectors are of good quality. Where possible, it would be sensible to purchase them via a reputable source. However, if the solution cannot be found within this article, there are

many sources of information that can assist you. Your IT department or the manufacturer should be able to advise you as to the best options and, of course, there are websites such as Google or YouTube. However, internet searches can lead to frustration, as many of these products may be untested, so again, advice from a trusted source with good quality components is always the better option.

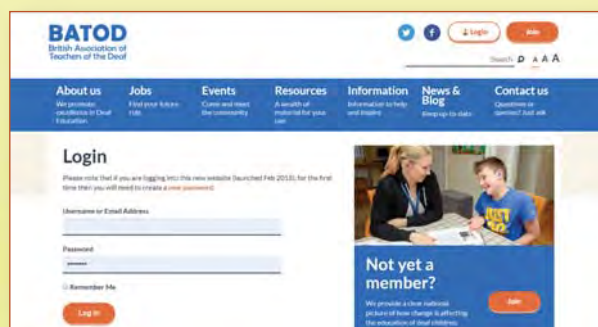
Tony extends his thanks to the team at Connevens.



Tony Murphy is the Business Development and Technical Specialist Manager at Phonak.

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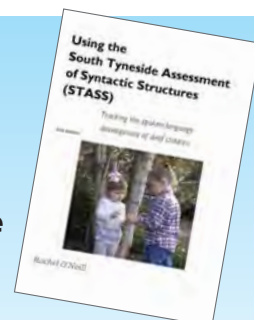
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Available to download from the Scottish Sensory Centre (SSC) website: <http://www.ssc.education.ed.ac.uk/library/publications/stass.pdf>



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