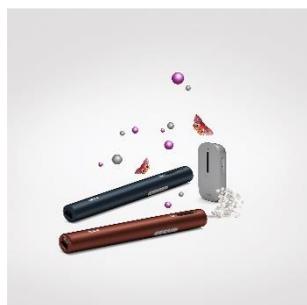


# REMOTE MICROPHONE COMPARISON

## PHONAK ROGER™ MICROPHONES

*Jim Russell, Hearing Loop Australia  
Educational Audiology Specialist | BDM  
MACAud | MEAA | Dip. HDPE | SoAA | Cert IV Aud.*



### Introduction

Assistive hearing technology is the perfect solution to use in conjunction with hearing devices to assist in groups and over distance, be it in conjunction with a hearing impairment or a sensory auditory disorder. Choosing the right solution for your needs is so important to the success of hearing and listening in high background noise situations and over distances. The following microphones will be compared in this article: Roger Touchscreen Mic, Roger Pen, Roger EasyPen, Roger Select, Roger Table Mic II and Roger Clip-on Mic.

Phonak Roger technology provides the user with significant improvements in speech understanding in noise when compared to traditional microphones.<sup>1</sup> From the classroom to challenging social situations, Assistive Technology is needed to overcome distance and noise.

The Roger for Education portfolio is the only educational soundfield system capable of providing outstanding results in high noise levels with its dynamic functionality and ability to deliver a high-quality signal directly to a person with sensory impairment with a Phonak Roger Receiver.

Phonak Roger technology indicates outstanding results in the classroom where typically high noise levels are found. See Figure 1. Ambient Noise Level (ANL) results from Australian Studies.

*Figure 1. Ambient Noise Levels in the Classroom - Australian Studies.*

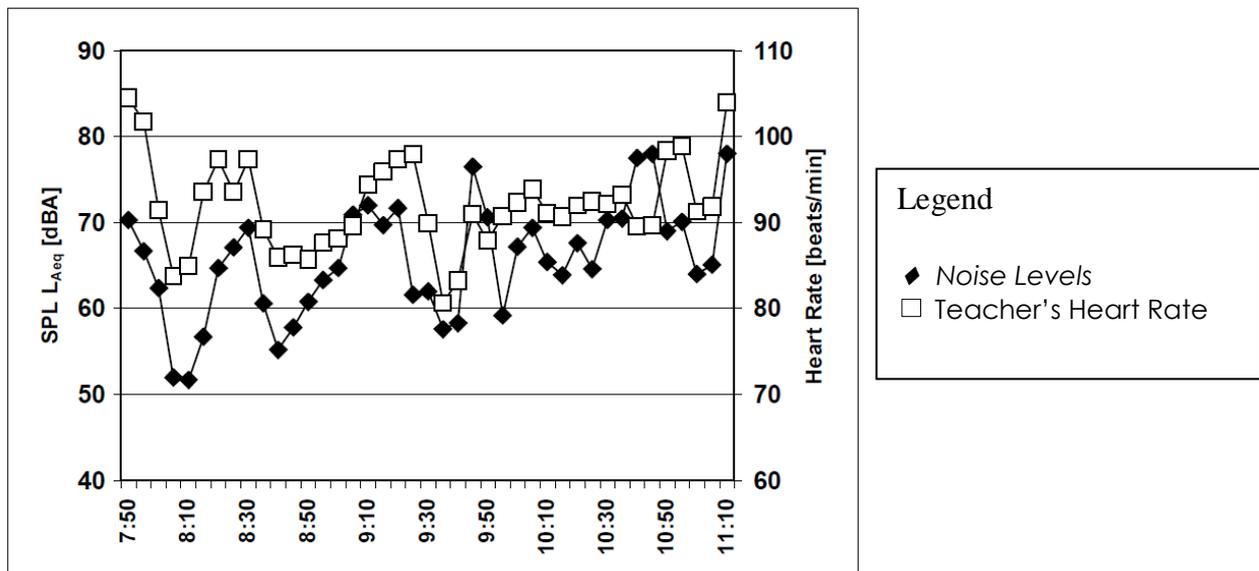
Study	Unoccupied ANL (dBA)	Occupied ANL (dBA)
<b>Rural Queensland</b>		62-75 dBA
<b>Australia</b>		64-72 dBA (Median 68 dBA)
<b>Sydney</b>	36-46 dBA	68-72 dBA

## Remote Microphone Comparison Phonak Roger™ Microphones

These studies revealed that over a standard day in an occupied classroom, the ANL levels were over 65 dBA. When you then consider that we require speech to be 15 dB above the ANL (+15dB SNR), then a teacher needs to project their voice to be over 80 dB to ensure students can hear the information and instructions. This makes for a very noisy classroom, a challenging listening environment and high-stress levels.

A study in Germany showed that a teacher's heart rate is directly correlated to that of the noise levels in the classroom, as shown in Figure 2.<sup>ii</sup> As the noise levels rose, so did the teacher's heart rate. At average background noise levels of approximately 65 dB, the heart rate increased to levels where the risk of a heart attack was more likely. Australian studies indicated the mean classroom noise to be around 68 dB.

Figure 2. Comparison of the average noise levels in the classroom or SPL trend in relation to the teacher's stress response (heart rate), over two double periods.



### Roger Touchscreen Mic



A microphone designed specifically for students and teachers, Phonak's educational portfolio is the microphone of choice for the educational environment.

The educational environment is clearly a challenging environment requiring a remote microphone system, capable of providing a quality signal over distance as well as in high noise levels. Phonak's Roger Touchscreen Mic delivers a high-quality speech signal through its beam-forming microphones, directly to the student with the Roger

# Remote Microphone Comparison

## Phonak Roger™ Microphones

receiver. When used in Lanyard mode, the microphones on the Roger Touchscreen are forced into a directional microphone configuration, which is ideal for frontal lecturing or communication from a single person.

I have personally used the Roger Touchscreen Mic to deliver a lecture to hearing impaired users and whilst listening to others presenting to a hearing impaired audience. My experience has been consistent with many other presenters, that when the Roger Touchscreen Mic and Roger Digimaster Loudspeaker were used, we didn't need to raise our voices above the noise levels in the audience. Furthermore, the participants appeared to be more attentive. And when listening with a Roger Digimaster Loudspeaker used in conjunction with a Roger Focus, the signal was clear, easy to understand and follow without requiring effort or strain to hear the lecturer. Even when the listener was positioned at the back of the room.

When I reflect on other microphones that I have used for presentations from general PA microphone systems to other soundfield systems, the Roger Touchscreen Mic made me sound clearer, my voice quality was natural, and I was able to observe the audience's increased attentiveness.

In addition to what is an excellent microphone for lecturing style conversations, the Roger Touchscreen Mic possesses an additional feature to assist in group settings, known as 'Small Group Mode'. This mode is automatically activated. When it is laid on a flat surface, three integrated microphones and beam-forming technology are activated. This intuitive technology tracks the conversation in 360 degrees, providing great speech understanding and minimal background noise. It manages this through advance algorithms tracking the strongest speech signal using the beam-forming microphones. It then selectively amplifies the speech signal whilst minimising the amplification to the ambient noise sounds from around the room. It could be said that the Roger Touchscreen Mic selectively amplifies the speech signal in that listening environment over the background noise. This also means that you can place the microphone on a flat surface or table with the device pointing in any direction and without the need to move or reposition it, a clear speech signal will be maintained.<sup>iii</sup> When I have used this setting both in a classroom environment and a café, I noticed the speech from the people around the table was clear and the background noise was not intrusive. The addition of the rubber feet on the bottom of the Roger Touchscreen Mic means that minimal noise is picked up from the surface of the table; ranging from pens on the table, to cutlery, to cups being picked up and placed on the table at the café. These additional features make this a powerful table or conference microphone.

The third (optional) microphone mode is known as 'Pointing' mode. This mode allows the user to hold the microphone and point it in the direction in which they wish to

## Remote Microphone Comparison

### Phonak Roger™ Microphones

listen. This is a great option for social situations where you are moving around the room and speaking with multiple people. The speaker can be heard with good sound quality up to 4 meters away.

In my opinion, one of the most versatile Roger microphones as it can be used both in an educational setting, used with other microphones in the [Phonak Roger for Education](#) portfolio and incorporated into a social situation as well.

### Roger Select



The latest Roger Microphone by Phonak, designed for those who require additional assistance in social situations of high noise levels or where distance is an issue. A great microphone for frontal lecturing, in meetings or lectures. Encompassing multiple microphones, the Roger Select microphone can be used on a table in small groups, meetings or restaurants. This device automatically activates its microphones based on the strongest speech signal in that listening environment. This is an easy and worry-free solution, in the presence of multiple speakers and high background noise levels.

Roger Select also boasts the feature of Bluetooth connectivity for hands-free phone calls or Skype calls via a personal computer with Bluetooth capabilities. This discrete option is the ideal microphone for use at home, social and work environments. It's worth noting that this microphone option is **not** compatible with the Phonak Roger™ for Education portfolio.

### Roger Pen / EasyPen



This microphone has been strategically designed to look like a pen and provides a discreet, stylish remote microphone solution for assistance in noisy environments and to minimise the effect of distance for hearing impaired people. This microphone option works well with the [Roger Clip-On Mics](#), Roger Pens, [Roger Selects](#) and [Roger Table Mics](#). The flexibility of this device means it works well as a discrete option in the workplace as well as social situations. Whilst this solution works great with most Roger transmitters unfortunately like the Roger Select, it is **not** compatible with the Roger for Education portfolio.

## Remote Microphone Comparison Phonak Roger™ Microphones

Roger Pen, also offers connectivity to Bluetooth devices. It can be used for Skype calls, mobile phone calls and connections with other Bluetooth devices supporting the headset protocol. It offers the user the option of using this microphone in an automatic program or manual program. The manual option allows the hearing impaired person to manually control the behaviour of the microphones within the Roger Pen from automatic mode, lanyard mode, conference mode and interview (pointing) mode. The automatic option selects the most appropriate microphone mode for the listening environment, based on its orientation. The Roger Pen can be utilised for listening to the television.



Roger EasyPen, is a simplified version of the Roger Pen microphone. It has all the convenient and easy to use automatic features of the Roger Pen, without the manual microphone program and no Bluetooth. It is an excellent microphone option for those looking for an easy to use a remote microphone to help at home and social situations where Bluetooth and control is not a priority.

### Roger Table Mic II



The conference microphone designed for the hearing impaired or individuals with sensory impairments. The perfect partner for the Roger Select or Pen in a work situation, where a large area such as a boardroom needs to be covered. The Roger Table Mic II utilises the same great microphone options found in the Roger Select to provide great speech clarity from around the table and reduce the background noise.



### Roger Clip-on Mic



The Roger Clip-on microphone has been designed as a great solution for hearing one to one conversations, over distance and noise. This small and light weight microphone can be worn either clipped to clothes or around the neck on a lanyard. It's the ideal solution for use at home, for parents and infants. When it's connected to the docking station, it can stream an audio source such as a television.

# Remote Microphone Comparison

## Phonak Roger™ Microphones

When the Roger Clip-on mic is paired with the [Roger Table Mic II](#) it becomes a perfect lapel microphone in large meetings and board rooms.

### Summary

Phonak's Roger Technology truly offers a solution for all listening situations. It caters for a wide variety of hearing capabilities, ranging from normal hearing users that need assistance over distance or in complex noisy environments, and to those with mild to severe degrees of hearing impairment.

In my professional opinion and based on my industry experience, the Roger Touchscreen Mic is one of the most versatile microphones on the market today. It delivers an exceptionally high quality of speech clarity in the most challenging background noise situations and should be the number one choice for the educational setting. The outstanding benefits of this microphone in the classroom has been well researched, and it can be conveniently and easily used in conjunction with the other Roger for Education products.

Roger Pen, EasyPen, Select, Table-Mic and Clip-on microphones are discreet options for a variety of situations such as the workplace, large meeting rooms, social or home situations covering large meetings rooms. Some of these options offer connectivity with Bluetooth devices and Televisions.

Roger™ is the gold standard in wireless microphone systems.

Should you need more information or would like to explore options for your unique situation, contact the friendly team at Hearing Loop Australia.

Email: [info@hearingloop.com.au](mailto:info@hearingloop.com.au)

---

<sup>i</sup> Phonak AG, 2014, "Comparison of Wireless Microphones", Phonak Field Study News, V1.00 2014-12.

<sup>ii</sup> Tiesler, G & Oberdörster, M, 'Noise – A Stress Factor?', Euronoise, 2006.

<sup>iii</sup> Phonak AG, 2016, 'Roger Touchscreen Mic Small Group Mode', Phonak Insight, V1.00 2016-01.