

# Notes regarding the practical use of Albrecht AE 38 S2a larynx microphones with audio equipment

Frank Scherbaum and Daniel Vollmer  
University of Potsdam  
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## Introduction

The separation of individual singing voices from audio recordings, e. g. for subsequent analysis such as transcriptions is a long standing problem in ethnomusicology and one of the technical challenges in Music Information Retrieval (MIR) research. The problem is particularly severe if the singers are in close bodily contact during their performances.

As a simple and pragmatic solution, in particular for cases where the subsequent analysis of the recordings is performed computationally, Scherbaum et al. (2015) suggested the use of larynx microphones (in addition to classical microphones). Since then, this idea has been thoroughly tested and applied in several field expeditions (Scherbaum, 2016, Scherbaum et al., 2019). Recording examples have been presented by Scherbaum et al. (2018) and are available online at the accompanying website.

## Our own learning curve

What we first had to learn is that larynx microphones can NOT simply be plugged into conventional audio interfaces, field recorders and the like, since they are usually operated with professional mobile radio (PMR) links ( [https://en.wikipedia.org/wiki/Professional\\_mobile\\_radio](https://en.wikipedia.org/wiki/Professional_mobile_radio)). Even the terminology, e.g. PTT button for Push-To-Talk button required getting used to.

Our main experience comes from working with Albrecht AE 38 S2a larynx microphones, which have served us very well during several ethnomusicological field expeditions. The only drawback has been that some singers, in particular women, did not feel very comfortable with wearing a neckband.

In the beginning, we used the larynx microphones exclusively with audio equipment providing 48 V phantom power, for which we had built our own voltage divider adaptor down to the 3-5 V plugin-power which the larynx microphone requires. Now we have switched completely to commercially available adaptors which makes it easier for others to benefit from our experiences.

The only modification which we now make to the Albrecht AE 38 S2a larynx microphone is to sever the microphone cable from the technical PTT unit (see Appendix) and connect it to a 3.5 jack plug as described below.

# Modification of the AE 38 S2a larynx microphone

Since we neither use the Push-To-Talk button (PTT in the user information sheet) nor the headset part, we cut the cable coming from the two electret condenser microphone capsules before it is going into the box labeled „Tactical PTT“ (see information sheet in the Appendix). The picture below shows the severed cable with the cut black (sometimes transparent), white, red, green, and copper wires, the silver/black female connector from which the cable is severed and a golden standard 3.5 mm TRS male plug (which you have to buy).

Subsequently we connect the white wire to the tip and the black wire to the sleeve (GND) of a 3.5 mm TRS jack plug (shown in the upper left corner of the figure). The ring connector remains empty. If there is no black wire, but a transparent wire, than this one has to be connected to the sleeve (GND). That's all!!!

The connection is the same as if we would use an audio adapter from a 2.5 mm jack socket to a 3.5 mm jack plug (e. g. [https://www.voelkner.de/products/150543/SpeaKa-Professional-Klinke-Audio-Adapter-1x-Klinkenstecker-3.5mm-1x-Klinkenbuchse-2.5-mm-Schwarz.html?frm=ffs\\_adapter%20klinke%202%2C5mm](https://www.voelkner.de/products/150543/SpeaKa-Professional-Klinke-Audio-Adapter-1x-Klinkenstecker-3.5mm-1x-Klinkenbuchse-2.5-mm-Schwarz.html?frm=ffs_adapter%20klinke%202%2C5mm)), put it onto the 2.5 mm microphone plug (see user information sheet in the Appendix) and push the PTT button permanently.



## Modes of operation

We currently operate the Albrecht AE 38 S2a in 2 modes:

- a) via a RØDELink Newsshooter Kit radio link (<https://de.rote.com/wireless/newsshooter>). In this case, we connect the the 3.5 mm jack plug coming from the modified AE 38 S2a with the 3.5 mm jack socket of the transceiver and turn OFF the phantom power. On the receiver side, we connect the 3.5 mm jack socket via a 3.5 mm to XLR plug adaptor (Kortwich, Berlin) with the XLR socket on a Zoom F8 multi track field recorder (<https://www.zoom.co.jp/products/handy-recorder/zoom-f8-multitrack-field-recorder>). Here also, the phantom power needs to be turned OFF!
- b) via XLR-cable. In this case, we connect the AE 38 S2a with the 3.5 mm jack socket of a RØDE **VXLR+** adaptor. This is a 3.5mm TRS socket to male XLR adaptor, which will convert 12-48V Phantom Power down to 3-5V 'Plug in Power'. The XLR plug of the adaptor is connected via XLR cable to the XLR input socket of the Zoom field recorder. In this case, the phantom power on the field recorder side needs to be turned ON.



In conclusion, with an additional investment of less than 30 Euros (on top of the approx. 55 Euros for the AE 38 S2a), we obtain a very flexible setup with which we can use the AE 38 S2a larynx microphones both with radio link or with cable.

## References

Scherbaum, F., Mzhavanadze, N., Rosenzweig, S., & Müller, M. (2019). Multi-media recordings of traditional Georgian vocal music for computational analysis. In 9th International Workshop on Folk Music Analysis, 2-4 July, 2019 (p. submitted). Birmingham.

Scherbaum, F., Rosenzweig, S., Müller, M., Vollmer, D., & Mzhavanadze, N. (2018). Throat Microphones for Vocal Music Analysis. In Demos and Late Breaking News of the International Society for Music Information Retrieval Conference (ISMIR).

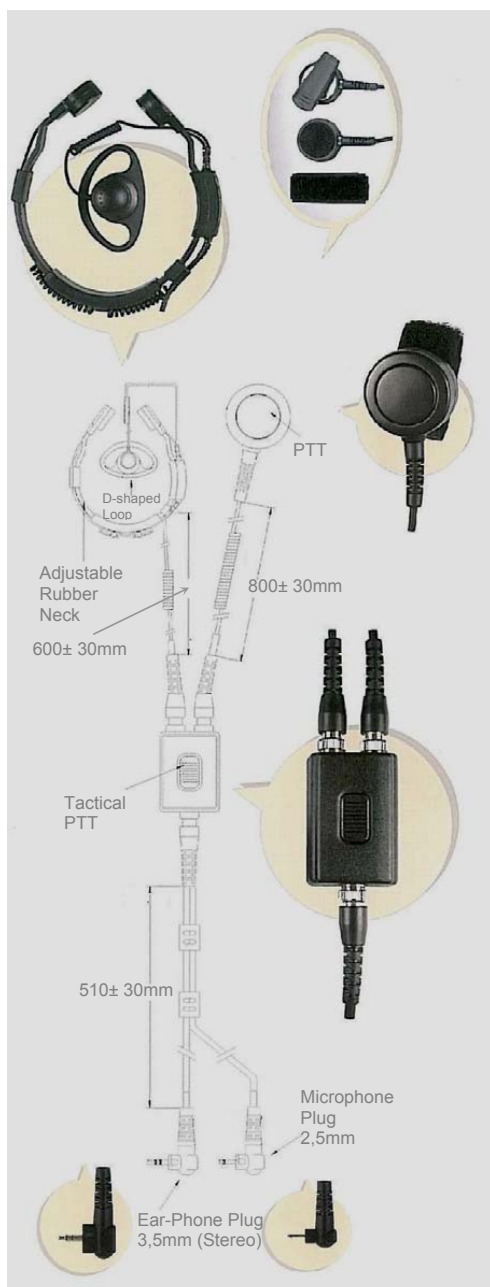
Scherbaum, F. (2016). On the benefit of larynx-microphone field recordings for the documentation and analysis of polyphonic vocal music. Proc. of the 6th International Workshop Folk Music Analysis, 15 - 17 June, Dublin/Ireland, 80–87.

Scherbaum, F., Loos, W., Kane, F., & Vollmer, D. (2015). Body vibrations as source of information for the analysis of polyphonic vocal music. In Proceedings of the 5th International Workshop on Folk Music Analysis, June 10-12, 2015, University Pierre and Marie Curie, Paris, France (Vol. 5, pp. 89–93).

# Appendix



## AE 38 S2a Dual Throat Activated Microphone (Ear-loop Type) User Information



This microphone/ headset combination provides durability, reliability and clear audio performance and is a perfect solution for high noise and tactical environments.

Dual electret condenser microphones pick up the user's voice directly from vocal cord vibrations on ambient nearby noise perfectly and produces excellent audio transmission.

Our patented D-Shaped detachable earphone uses rubber ear loop which holds the earphone in place comfortably provides privacy and discreet communications. **The earphone has a 2.5mm plug and can be exchanged to use other models.**

The modular microphone cables are made for easier field repairs, features a large PTT switch which can be easily activated even while wearing heavy clothing and also a finger PTT.

This headset is suitable to be connected to mobile radios equipped with 3.5 / 2.5 standard plugs. The separate 90 degrees angle connectors allow adjustment to any desired plug-in angle. The 3.5 mm stereo type speaker connector allows also a short-circuit protected connection to car or bike navigators with stereo outputs.

Some ALAN or Albrecht handheld radios are equipped with a **single 2.5 mm stereo socket** for audio accessories. To connect such radios to this headset, You can use our **adapter 29254** (optional available).

**Please note before use:** Radios can have various receiving volumes according to equipment. The volume at the ear plugs has already been optimised at a safe level for Alan, Midland and Albrecht products. However, extreme volumes may occur depending on the type of radio if the volume switch is in a higher position. Please start with the minimum position and increase the volume if necessary.

Automatic voice operation (**VOX**) is possible as well. In that case please switch the radio according to its user manual into VOX operation and speak without pressing any PTT knob.

### Disposal and Recycling of Electronics Waste

The European WEEE regulations do no more allow to dispose electronics items via household trash. Please dispose defective and no more usable electronic items only via officially allowed collecting points.



Please contribute to the efficient recycling of used electronic items!

**CE conformity:** This radio accessory item is conform to European directives, standards EN 301 489- series and EMC, LVD and R&TTE regulations for radio communication products.



### European 2 years warranty

The warranty for our products is regulated according to European laws. If you should encounter any problem, please have a look first to the user manual, to our service hints or frequently asked questions (FAQ) on **[www.service.alan-electronics.de](http://www.service.alan-electronics.de)** before You contact the distributor, where you have purchased this headset item, or contact our German service partner directly (only for products purchased in Germany).

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**Service Partner and Hotline:** PST professional support technologies GmbH - Breitscheider Weg 117 a - D-40885 Ratingen

e-mail support: [alan-service@ps-tech.de](mailto:alan-service@ps-tech.de)

Service hotline: 01805 012204 (12 Cents/minute from German fixed networks or max. 42 Cents/minute from German mobile networks)