



GRAPHIC EQUALISER KIT

USER GUIDE v 2.0

Overview

The Graphic Equaliser Kit (EQ KIT) is an add-on kit for use with the Wireless Headset Interface (WHI). It enables the supervisor to make bass and treble adjustments to the divers' audio back to the Supervisor. It connects into the diver radio audio out (headset) circuit between the diver radio and the WHI. It only makes adjustments to the audio that the supervisor hears. It does not affect the audio recorded to the black box or to the divers.

The EQ KIT, can be used to reduce lower frequency ambient noise, such as scrubber and fan noise from the bell. It also allows the supervisor to increase the higher frequency audio (3kHz – 6kHz) to compensate for loss of voice clarity in helium and for hearing loss such as industrial deafness and age-induced hearing loss in this range. It can also be used to reduce the higher frequency hissing noises caused by diver breathing. It allows each supervisor to personally adjust the audio frequency output of the diver radio to improve helium speech intelligibility.

The EQ KIT consists of a 7-band mini graphic equaliser, power supply, adapter cables and connectors to fit to your existing WHI.

The EQ KIT requires a 220 volt or 110 volt power source, much like the Plantronics wireless headset system does. A transforming power supply is included in the EQ KIT.

The EQ KIT has a one (1) year limited manufacturer's warranty.



Figure 1: EQ-KIT v1.0 to suit earlier WHI models (2011 to Sep 2020)

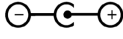


Figure 2: EQ-KIT v2.0 to suit WHI v3.2 and WHI-PTT v1.0 (Oct 2020 onwards)

WARNING

The EQ KIT and the Plantronics wireless headset base unit power supplies have the same size 9-volt power jack. The EQ KIT is **negative polarity** (pin negative). The wireless headset base unit is **positive polarity** (pin positive). **DO NOT** use the EQ KIT power supply with the wireless headset base unit or vice versa. You will damage the graphic equalizer and the wireless headset base unit.

If you forget which is which, look at the specifications printed on the power supply and you will see a polarity diagram:

The Plantronics Wireless Headset Base Unit is:  PIN POSITIVE (+), SLEEVE NEGATIVE (-)

The Graphic Equaliser Kit is:  PIN NEGATIVE (-), SLEEVE POSITIVE (+)

Components



Figure 3: Graphic Equaliser Kit v1.0 components

The EQ KIT v1.0 is supplied with the following components:

- 7-Band Graphic Equaliser with line volume control and soft storage cover;
- 220v/110v – 9 volt power supply;
- 2 x 0.5 metre extension cables with 6.35mm TRS plugs; and
- Selection of connectors and adapters to connect with WHI 6.35mm & 3.5mm jacks and plugs.



Figure 4: Graphic Equaliser Kit v2.0 Components

The EQ KIT v2.0 is supplied with the following components:

- 7-Band Graphic Equaliser with line volume control and soft storage cover;
- 220v/110v – 9 volt power supply;
- Custom 3.5mm TRRS – 6.3mm TS – 3.5mm TRRS adapter
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Connection Diagrams

1. Connect the EQ KIT into the WHI headphone circuit. You may connect the WHI cable and diver radio adapters directly into the graphic equaliser. The diver radio headset adapter must connect to the IN jack and the WHI plug must connect to the OUT jack of the graphic equaliser as shown below:



Figure 5: Banana Plugs



Figure 6: Y-Adapter

- Alternatively, you may use the 0.5 metre extension cables to position the graphic equaliser in a convenient location. Ensure that the cables are connected to the correct IN and OUT jacks on the graphic equaliser.



Figure 7: Graphic Equaliser with extension cables, WHI and wireless headset connected

If you are using the EQ-KIT v2.0, connection is very straight-forward as shown below:



Figure 9: Banana Plug adapter



Figure 8: 6.3mm TS adapter

Set Up

- Connect your Wireless Headset Interface and Plantronics wireless headset system as normal. Ensure the wireless headset battery is suitably charged and power is on.
- Insert the graphic equaliser into the headset circuit as shown above. Use the supplied extension cables to position the graphic equaliser in a convenient position if required.

Note: Earlier WHI units have 6.35mm plugs, whereas newer WHI units have 3.5mm plugs. The graphic equaliser has 6.35mm jacks. Adapters and connectors are included in the EQ KIT to fit to your WHI, no matter what size plugs you have.

3. Connect the EQ KIT power supply to the graphic equaliser. **Ensure you have connected the correct power supply to the graphic equaliser. The wireless headset base unit power supply is opposite polarity and is not compatible with the graphic equaliser.**
4. Turn on power to the graphic equaliser power supply. To switch the graphic equaliser audio effects ON or OFF, press the silver button on the top of the equaliser until it clicks. The graphic equaliser power settings are:
 - a. **ON – RED LED** indicator is illuminated, the graphic equaliser effects will be active and the audio will be adjustable by the equaliser controls; or
 - b. **OFF (TRUE BYPASS) – RED LED** is **NOT** illuminated, the graphic equaliser will not be active and the headset audio will pass through the equaliser from the diver radio unchanged.

NOTE: Switching the graphic equaliser off WILL NOT switch off audio to the supervisor. It will just switch off the audio effects created by the graphic equaliser.

5. Set the equaliser band settings for minimum bass, maximum treble and mid line level as follows to start:

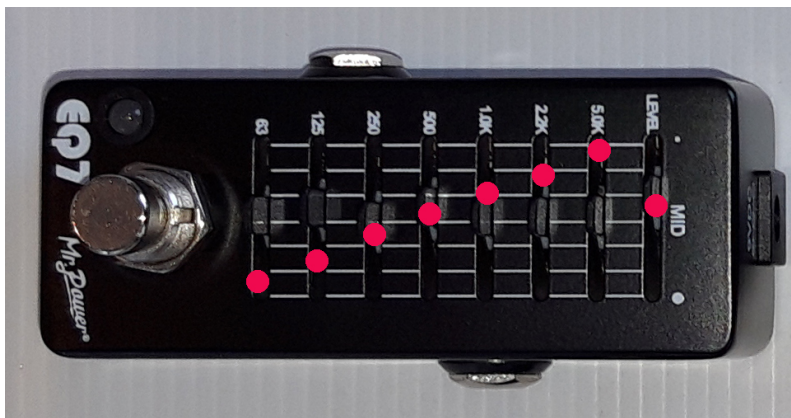


Figure 10: EQ KIT Startup Setting

6. Adjust the diver radio audio settings to give the divers maximum cross-talk volume or as much as possible until the divers can hear each other well enough.
7. Reduce the wireless headset volume (on the earpiece) to minimum.
8. Adjust the line LEVEL volume on the EQ KIT until the supervisor headset volume is at an acceptable level.
9. Fine tune the band settings on the graphic equaliser until you get the best clarity in the audio. Every dive system will be a little different, but generally the settings should be something similar to Figure 5 above for the best clarity. Reducing the 5.0K band a bit will reduce high pitched treble sounds. Lower settings in the

lower bands (63Hz and 125Hz) will reduce monotone hum of scrubber and fan motors, but you may need to adjust it up a bit to get acceptable audio from the bellman.

10. Just experiment with the band settings a bit and you will soon find a setting where the divers voice is much crisper and clearer than without the equaliser.

Compatibility

The EQ KIT is compatible with all diver radios where the Wireless Headset Interface can be used. It will work with all the supplied adapters, including the Nautronix Modular Adapter.

Thank you for purchasing the Graphic Equaliser Add-On Kit.

Check out the website www.diverwireless.com for more information.

If you have any questions, feedback or need advice on setup or wiring configurations, I can be contacted as follows:

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