



Product description

This DIANGEL brand entertainment audio earmuff is designed to improve safety and working conditions in noisy environments. This user information is applicable for the Over-The-Head earmuff model EZ-1B. To ensure you get the best comfort, fit and function out of the product it is important that you read the instructions carefully and save them for future reference. Please refer to the sound attenuation table for further details on noise reduction. It has electronic sound limiter to cap entertainment audio sound pressure level to 82dBA effective to the ear. This earmuff also provides electrical audio input signal via Bluetooth which can be connected to smart phone for communication or via the Ø3.5 audio jack. There is no limiter to the sound pressure level in this instance. Refer to the instruction in this user guide for proper use of this product. Make sure you have selected the correct product for your application.

Approvals

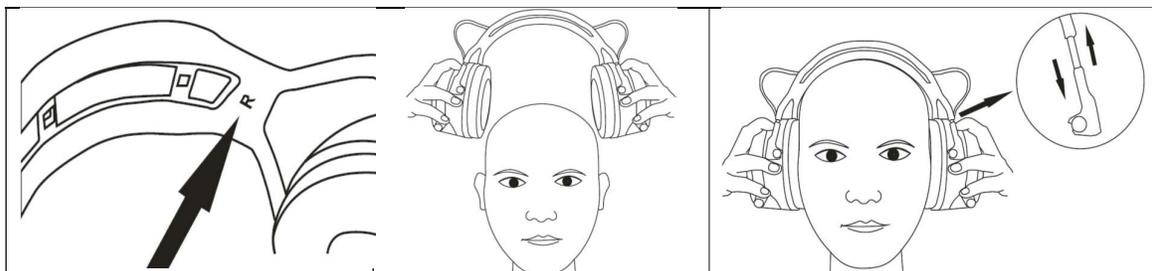
The product meets the Basic Safety Requirements as laid out in Annex II of the European Community Directive 89/686/EEC and the requirements of the EMC Directive 89/336/EEC. The product is tested by INSPEC International Ltd, UK and Combitech AB, Sweden and CE marked by INSPEC International Ltd (Notified body number 0194) according to EN352-1:2002, EN352-6:2002 and EN352-8:2008.

Earmuffs specification:

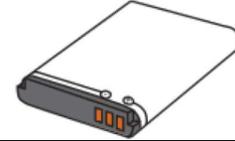
- Sound attenuation rating (SNR) of 29 dB
- Built-in high sensitivity noise protection microphone ensures best call quality
- High quality speaker with stereo effect
- One key phone call answering function
- 4G built-in SD memory card, supports MP3/WMA music format
- Blue back-lit LCD screen with white characters
- FM radio (88 – 108 MHz) with automatic search and automatic save functions
- Bluetooth connectivity with smartphone
- Ø3.5mm audio jack
- Min-USB port for power charging as well as data transfer
- Low power consumption with 16+ hours play time on one single full charge

General fitting instructions

Before following the fitting instructions below, brush excess hair aside and remove any ear jewellery that could affect acoustic seal. The cushions should form a snug fit against the head with no interference of the seal by any objects, e.g. respirator headbands or spectacles arms, and that the cups completely enclose the ears.

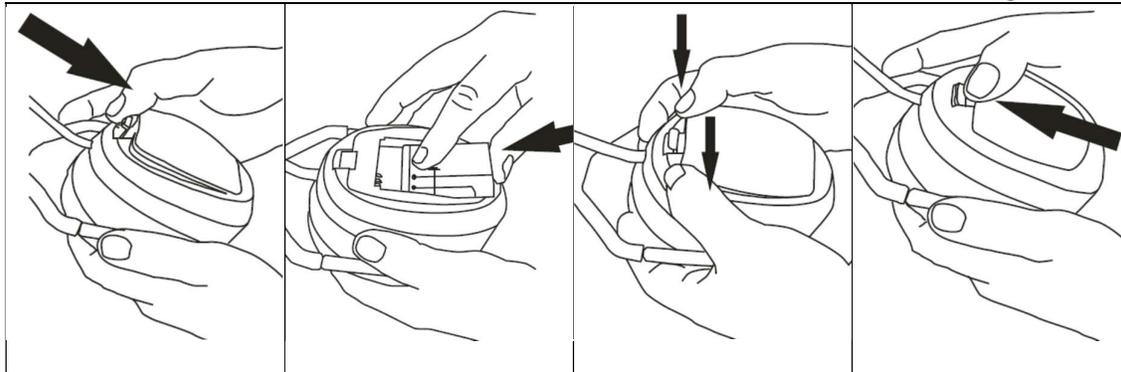


1. Ensure that the cup with LCD and control buttons is on the RIGHT side before putting it on your head. Read the marking on the headband.
2. Place the headband over the head by pulling it ajar slightly.
3. Adjust the height of the cups by sliding them up and down so they seal the ears completely.



Battery replacement

EZ-1B uses a 3.7V rechargeable Li-Ion battery, commonly known as BL-5B and is easily available in the market. The battery compartment is located in the cup WITHOUT the knobs/buttons and LCD display.



1. Push the lever following the arrow direction to open the lid.
2. Insert the battery accordingly, taking care the polarity is correct.
3. Replace the lid and press it over the compartment gently.
4. Make sure the lever is snapped back into place to secure the lid.

Recharge the battery when the radio signal is intermittent or fails to operate altogether. This is done by connecting the mini-USB cable to a computer or a wall charger rated at 5V. Recharging will stop automatically when the battery is full.



WARNING: Do not charge the battery with voltages higher than 5V. Always turn the earmuffs off when charging.

There are three different ways music can be piped in the earmuffs, i.e. FM radio (frequency band of 88 ~ 108 MHz), MP3 via the 3.5mm audio jack, and Bluetooth connected to a smartphone.

Operating instructions

Function keys

1. Power On/Off

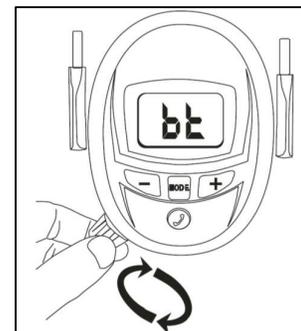
Switch on the power by turning the round knob clockwise. A clicking sound can be heard when it is switched on. To switch off, turn the knob anti-clockwise until the clicking sound is heard again.

2. Bluetooth mode

- a. The earmuffs will automatically turn to Bluetooth mode when it is powered on. A voice prompt as well as screen message will come on as follows:



- b. For first time pairing of earmuffs with your smartphone Bluetooth, go to your phone setting and activate the Bluetooth function. Allows Bluetooth to scan devices in the vicinity and then select the earmuffs to connect. A voice prompt as well as screen display will indicate successful





connection. No pairing is required when you turn on your earmuffs next time. It will remember to re-connection automatically.

- c. You are now ready to enjoy your favourite music from your smartphone. Press “+” and “-” keys to toggle between songs in your playlist.
- d. To adjust volume, long press the “+” or “-” button. Use the side rotary knob for auxiliary volume control and a better auditory effect.
- e. To pause, short press the “Phone” key . To resume, press again.
- f. To receive a phone call, a voice prompt will alert you of the incoming call. Short press the “phone” key again to answer the call and start talking. A highly sensitive microphone embedded inside the earmuffs will pick up your voice.

3. MP3 mode

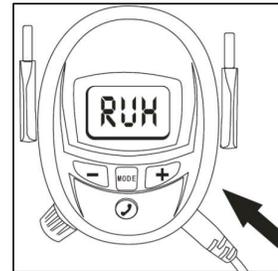
- a. To access MP3, short press  key.
- b. For first time use, you would need to download your favourite music onto the in-built SD card before you could enjoy them. Use the mini-USB cable to connect the earmuffs to your computer and download the music of your choice.
- c. To toggle between music/songs, short press “+” and “-”.
- d. To adjust volume, long press the “+” or “-” button. Use the side rotary knob for auxiliary volume control and a better auditory effect.
- e. To pause, short press the “Phone” button . To resume, press again.

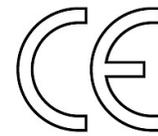
4. FM radio mode

- a. Short press  key to switch to “FM radio” mode.
- b. For first time use, short press “Phone” button  to start radio station searching and auto-save functions. Each of the station selected is given a number in the playlist.
- c. At the end of the search, press either “+” or “-” to toggle between stations.
- f. To adjust volume, long press the “+” or “-” button. Use the side rotary knob for auxiliary volume control and for a better auditory effect.

5. Ø3.5mm audio input jack

Use the jack to connect the earmuffs to an external device. All other functions cease as soon as the jack is inserted and the earmuffs will start to play music/song from the external device. This jack can also be used to play music/song when the earmuffs’ battery is flat. Maximum input signal is 113mV.





6. Mini-USB port

Use the mini-USB cable provided for charging the earmuffs' battery.

Use it too to connect the earmuffs to a computer in order to download music/songs and save them in the in-built SD card.

Storage

When the earmuff is not in use, store it in such a way that the headband is not stretched and the cushions are not compressed. Keep the earmuffs dry and clean, store them at normal room temperature and do not place them in direct sunlight or in hot environment. If the earmuff is to be stored for a prolonged period of time it is recommended that the batteries be removed to avoid damaging/corroding the metal contacts in the compartment.

Maintenance

Clean and disinfect the cups, cushions and inserts with mild household soap and water only. Ensure the cleaning agents used does not have adverse effect to your health and safety. Earmuffs and cushions in particular may deteriorate with use and should be examined at frequent intervals for cracking and leakage, for example at the start of every working shift. Do not subject the earmuff to rough handling, which can damage the electronics or the LCD screen. The cushions and inserts are not replaceable.



WARNING: The earmuffs must not be immersed in water!

Compatibility

Earmuffs complying with EN352 are of large size.

Materials

Parts	Materials	Parts	Materials
Cups	ABS	Cushions	PU
Headband	Wire arms with TPE cover	Inserts (foam)	EVA
Headband fork	POM		



WARNINGS:

- The user must ensure that the earmuffs:
 - Is fitted properly, maintained and adjusted in accordance with instructions contain in this user instruction guide.
 - Is worn at all times in noisy surroundings
 - Is inspected regularly for serviceability
- If the recommendations given are not adhered to, the protection afforded by the earmuffs can be severely impaired.
- These ear-muffs are of large size range. Ear-muffs complying with EN 352-1 are of 'medium size range' or 'small size range' or 'large size range'. 'Medium size range' ear-muffs will fit the majority of wearers. 'Small size range' or 'Large size range' ear-muffs are designed to fit wearers for whom 'medium size range' ear-muffs are not suitable.
- Earmuffs should be worn at all times in noise areas and be fitted prior to entering the noise area.
- The fitting of hygiene covers to the cushions may affect the acoustic performance of the earmuffs.
- This product may be adversely affected by certain chemical substances. Further information should be sought from the manufacturer.
- Remember that hearing protection can generally shut out external ambient sounds, such as warning shouts, alarms and other important signals. The audibility of warning signals at a specific



workplace may be impaired while during the entertainment facility. You should therefore be specifically watchful of your surroundings when wearing this hearing protection.

- This hearing protector contains batteries and electrical components that may cause ignition in flammable or explosive atmospheres. Do not use in environments where sparks may cause a fire or explosion. Misuse can result in injury or death.
- The performance may deteriorate with battery usage. The battery life time varies depending on the mode of use and volume output. For FM radio mode usage time is about 100h.
- When calculating the effective attenuation of the hearing protector, consideration should be given to the output signals of the radio restoration. The calculated total A-weighted sound pressure level inside the cup should not exceed 85dB.
- The output of the electrical audio circuit of this hearing protector may exceed the daily limit sound level.
- Dispose of the product and batteries in accordance with national legislation.
- This earmuff is provided with electrical audio input. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer for advice.
- User is forewarned that the Bluetooth communication system through the smartphone may not be suitable for essential safety related communication.

EN352-1 attenuation data

The sound attenuation values for the hearing protector are measured in accordance with EN24869-1. Please refer to the table below for further information.

Freq (Hz)	63	125	250	500	1000	2000	4000	8000
Mean (dB)	18.6	18.2	21.2	24.9	34.5	32.9	41.0	38.9
Std dev (dB)	3.4	2.9	2.8	2.8	3.9	2.2	3.0	3.1
APV (dB)	15.2	15.3	18.4	22.1	30.6	30.7	38.0	35.8

Note: APV = Assumed Protection Value

H = 33 dB, M = 26 dB, L = 21 dB, SNR = 29 dB

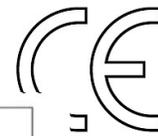
Gross weight (excluding batteries) = 362g

EN352-6 electrical input level

Electrical input level (U), mV rms	29,1	51,3	90,4	113,5	160,2
Mean plus one standard deviation A-weighted diffuse-field related sound pressure level (SPL) for the sixteen ears	70	75	80	82	85

Maximum auxiliary (AUX) electric input level for which the mean plus one standard deviation A-weighted diffuse-field related sound pressure level is equal to 82 dB at voltage U = 113 mV rms

A-weighted diffuse-field related sound pressure level for each sample and subject as a function of input signal level:



Nominal SPL, approx.	70 dBA	75 dBA	80 dBA	85 dBA	90 dBA	SPL	Subject	Ear-muffs
Electrical input signal level	50,0	89,0	158,3	281,4	500,3	mV		
	-26,0	-21,0	-16,0	-11,0	-6,0	dBV		
1	71,4	76,4	81,4	86,4	91,4	left	1	1
2	70,7	75,8	80,8	85,7	90,7	right		
3	72,8	77,8	82,8	87,8	92,7	left	2	
4	73,8	78,8	83,8	88,7	93,6	right		
5	72,8	77,9	82,9	87,9	92,9	left	3	2
6	71,9	76,9	82,0	87,0	91,9	right		
7	73,1	78,1	83,2	88,2	93,2	left	4	
8	72,8	77,9	82,9	88,0	93,0	right		
9	71,5	76,6	81,5	86,5	91,5	left	5	3
10	70,9	76,0	81,0	85,9	90,9	right		
11	71,3	76,4	81,5	86,5	91,4	left	6	
12	70,4	75,5	80,5	85,5	90,5	right		
13	76,3	81,5	86,5	91,5	96,5	left	7	4
14	74,6	79,8	84,8	89,8	94,8	right		
15	76,2	81,3	86,4	91,4	96,4	left	8	
16	76,0	81,1	86,1	91,1	96,1	right		
Average [dBA]	72,9	78,0	83,0	88,0	93,0			
Standard dev.	1,97	2,01	2,02	2,01	2,02			

Corrected ATF A-weighted diffuse-field related sound pressure level:

Electrical input [mV]	50,0	89,0	158,2	281,4	500,3	888,2	1580	2773	4939
Corrected ATF A-weighted diffuse-field related sound pressure level	75,0	80,0	85,0	90,0	95,0	99,8	104,8	109,4	113,6

Trouble shooting

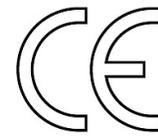
If the radio ceased to function please check the following:

- Replace the old batteries with new ones.
- Ensure that the batteries are correctly inserted.
- Ensure the battery is in correct orientation and contacts are good.
- Ensure that there is no moisture build-up inside the earmuffs. If any moisture is found, remove the inserts and allow the earmuffs to dry overnight.

If the above actions do not help, contact your dealer.

Accessories

- 1pc of 3.7V Li-Ion rechargeable battery
- 1pc of Ø3.5mm audio jack
- 1pc of mini-USB cable



Additional information

The following information is available upon request:

- Range of head sizes fitted;
- Detail information contains in this user information sheet;
- Results of tests performed in accordance with this standards;
- The name and country of the test laboratory which performed the testing and the date of the tests.

Manufacturer information

Name: Hangzhou Haoyue Safety Equipment Manufacturing Co., Ltd

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