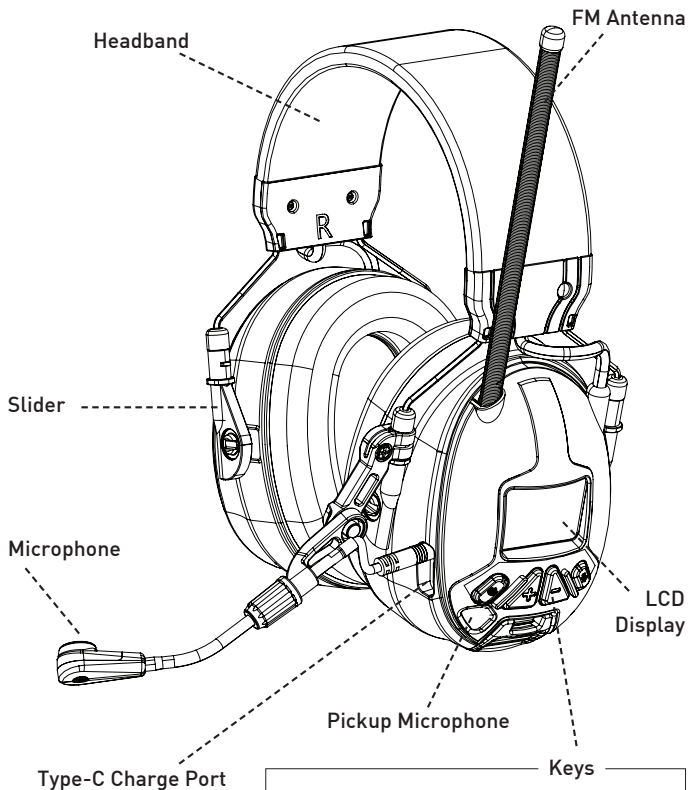




C52
Bluetooth/FM Radio Hearing Protection Headset
User instructions

Congratulations and thanks for your choosing EARMOR®
EARMOR® Hearing Protectors designed to protect users from harmful noise.

OVERVIEW



Multi-function
Button



Vol+
Button

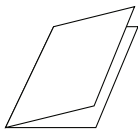


Vol-
Button

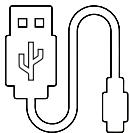


Bluetooth
Button

1. LIST OF ITEMS



- User instructions
×1



- USB TYPE-A to C
Charging Cable ×1



- EARMOR® C52
×1

2. SAFETY INFORMATION

Please read, understand, and follow all safety information in these instructions prior to using the communication headset. Retain these instructions for future reference.

3. DESCRIPTION AND INTENDED USE

Users should ensure that:

- 1) the earmuffs are fitted, adjusted and maintained in accordance with the manufacturer's instructions;
- 2) the earmuffs are worn at all times in noisy surroundings;
- 3) the earmuffs are regularly inspected for serviceability;

Note: if the recommendations given are not adhered to, the protection afforded by the earmuffs will be severely impaired;

4. DESCRIPTION

The EARMOR® C52 Bluetooth/FM Radio Hearing Protection Headset are high-performance devices, specifically engineered for complex work environments. They offer superior hearing protection by integrating advanced ambient sound pickup and noise-cancellation technologies, ensuring clear audio reception in noisy environments. The headset' Bluetooth connectivity enables seamless communication and media playback. A newly added feature, the FM radio, provides broadcast entertainment at any time, whether during breaks or in daily work routines. The LCD display allows for intuitive setting adjustments, facilitating quick and easy operation. Equipped with a long-lasting 48-hour

lithium battery and a convenient TYPE-C charging port, the C52 is designed for prolonged and stable use. They are suitable for a wide range of industries, including oil and natural gas, mining, automotive manufacturing, construction, design, food and beverage production, forestry, industrial maintenance, metal manufacturing, military maintenance, equipment repair, pharmaceuticals, racing, and transportation.

5. INFORMATIONS

For the best protection, ear cushion sealing ring should seal firmly against head, Anything that interferes with the seal --- such as long hair(pull back to the extent possible), thick or poorly fitting eyeglass temples, pencils or caps will lessen the protection.

- Earmuffs must be regularly inspected for cracks or worn parts and replaced as needed. Typical life for foam cushion sealing rings is 12 months.
- Clean the exterior of the hearing protector regularly with soap and warm water. Do not immerse the whole headset in water.
- Do not store the hearing protector behind a windshield or at temperatures above 131°F(55°C).
- Certain chemical substances may damage this product. Contact the manufacturer for more information.
- The product is suitable for transport in original packaging.
- The earmuffs passes small, medium and large size ranges, compliant to EN 352- 1:2020.

6. CAUTION

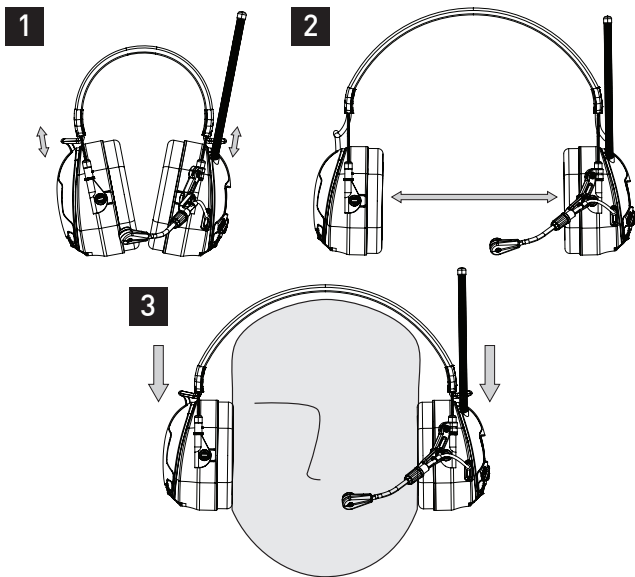
Failure to follow usage instructions may result in personal injury or significant impact on the headset's performance, such as increased interference or weakened volume. In such cases, the batteries should be replaced promptly. Wearing a headset helps reduce the risk of exposure to noisy environments, and any misuse or failure to wear the headset can lead to hearing impairment or loss. If you have any discomfort or infection in your ear, please consult a relevant doctor before wearing the headset to avoid causing hearing impairment or loss. For proper use, see user instructions or contact EARMOR® customer service Email: cs@earmor.com

7. TO REDUCE THE SAFETY RISK WHEN USING THE PRODUCT

- Only use the specified type of battery provided by OPSMEN.
- If the headset is not to be used for a long time, please remove the batteries to prevent leakage that may damage the headset or cause personal injury.
- If the microphone or any accessory is damaged or malfunctioning, please cease usage immediately.
- Contact OPSMEN official after-sales mailbox cs@earmor.com for maintenance service.

8. WEARING

When adjusting the headband, stretch the supports on both sides forcefully, ensuring that the ear cups fully cover the ears and the pickup microphone is oriented forwards. Then, contract the supports so that the headband fits snugly against the head.



9. FUNCTIONS

The C52 offer three modes for users to choose from:

Ambient listening Mode

In this mode, the headphones reduce hazardous noise in the user's surroundings while capturing and relaying important sounds like human voices, alarm signals, and horn honking to the user. This ensures the user's hearing health and communication ability in high-noise environments.

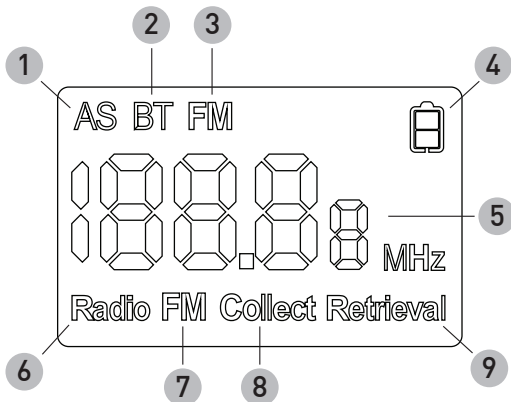
Bluetooth® Mode

Users can connect the C52 to devices with Bluetooth® audio transmission capabilities (such as mobile phones, TVs, tablets, audio players, video game consoles, etc.), enabling functions like music listening, voice calls, and using voice assistants. (*In Bluetooth® mode, the Ambient listening Mode is still effective.)

FM Radio Mode

Users can use the C52 to listen to FM radio broadcasts. An automatic tuning feature easily locates FM channels in the user's area, and up to five channels can be saved as favorites. (*In FM mode, the Ambient listening Mode is still effective.)

10. LCD DISPLAY

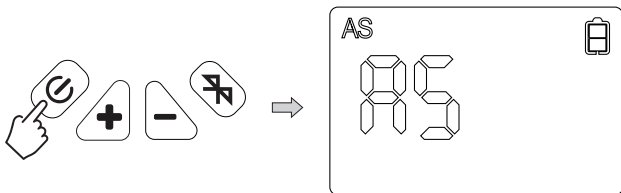


1. Ambient listening Mode active
2. Bluetooth active
3. FM Radio active
4. Battery Level Indicator.
5. Main Display Area: Shows device status, volume adjustment, current FM frequency, and other information.
6. The Device Enter FM Radio Mode
7. FM Tuning
8. FM Collection
9. FM Station Retrieval

11. OPERATION INSTRUCTIONS

- **Ambient listening Mode**

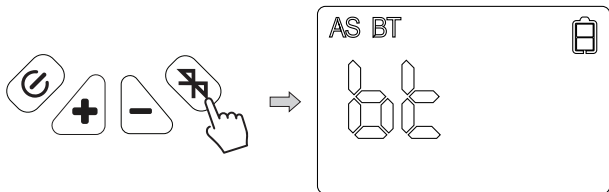
1. Press and hold  for two seconds to turn on the device, with a voice prompt: "Power on."
2. Then, the device will automatically enter the Ambient listening mode.



3. Press the **+** button to increase the ambient volume.
 4. Press the **-** button to lower the ambient volume.
- * The C52 offers 5 levels of ambient sound adjustment, with the pick-up noise reduction effect remains effective throughout device usage.

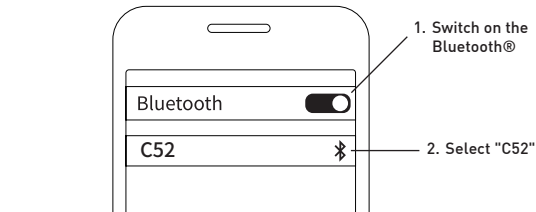
- **Bluetooth® mode**

After powering on, press the  button to enter Bluetooth® mode. with LCD display relevant information and a voice prompt "Bluetooth Mode".



2. When using the C52 for the first time, entering Bluetooth® mode will initiate automatic pairing. Please make sure the Bluetooth® function is activated on the device you want to pair with. Then, find the device named "C52" in the new device list and connect to it. You will hear a prompt saying "Connected" once the connection is successful.

- * The specific method of pairing may vary depending on the device. Refer to the manual of the device you are pairing with for detailed instructions.
- * The C52 has a pairing memory feature. When Bluetooth mode is activated again, the C52 will attempt to automatically re-pair with the last paired device.
- * If the C52 cannot automatically pair within 15 seconds, it will re-enter pairing mode.
- * If pairing is not successful within 5 minutes after entering Bluetooth mode, the device will automatically revert to Ambient listening Mode.



3. Use for phone calls:

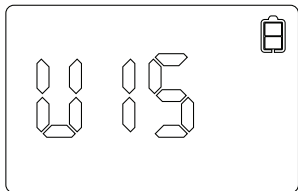
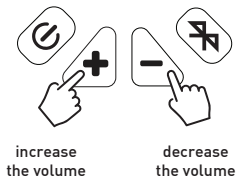
Answer the call	Click  for incoming call
Increase volume	Click  to increase volume during call
Decrease volume	Click  to decrease volume during call
Reject the call	Hold  for 2 seconds for incoming call
Hang up the call	Click  to hang up the call

4. Listen to Bluetooth music:

Play music	Click  button in pause mode
Pause music	Click  button in play mode
Increase volume	Click  button in play mode
Decrease volume	Click  button in play mode

5. Volume Adjustment:

In Bluetooth mode, there are 16 volume levels available. Press the  and  buttons to increase or decrease the volume, respectively. The screen will display volume level indicators ranging from "V00" to "V16".



* The example represents the volume level currently in 15.

6. Using Voice Assistant

In Bluetooth mode, press and hold the  for 2 seconds to activate the built-in voice assistant of your smart device.

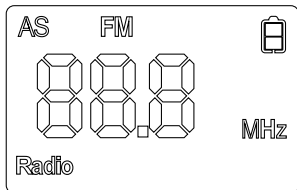
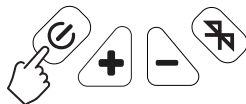
When the voice assistant is in standby mode, press and hold the  for 2 seconds to turn off the voice assistant.

7. Forcing Pairing Reset:

In Bluetooth mode, press and hold the  button for 10 seconds to clear all pairing information from the C52 and re-enter pairing mode. You will hear a voice prompt saying "Disconnect, Pairing On".

- **FM mode**

1. To enter FM Radio Mode, simply press the  button while in Ambient listening Mode. You will hear a prompt saying "FM Radio Mode," and the "Radio" indicator at the bottom of the screen will light up, displaying as follows:



*The numbers representing the frequency may vary according to the actual situation.

- **Operations available in FM Radio Mode:**

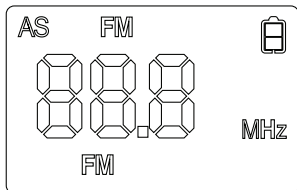
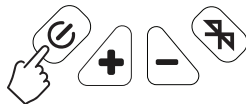
To increase the volume	press the + button
To decrease the volume	press the - button

*In FM Radio Mode, there are 5 levels for volume adjustment.

A "FM maximum volume" prompt will sound at the highest volume level.

A "FM minimum volume" prompt will sound at the lowest volume level.

2. When first using the C52, please perform an initial station search setup to ensure optimal reception quality in your area.
In **FM Radio Mode** on the C52, press the  button to enter **FM Tuning Mode**. You will hear a prompt 'Search', and the 'FM' indicator at the bottom of the screen will light up, displaying as follows:



*The numbers representing the frequency may vary according to the actual situation.

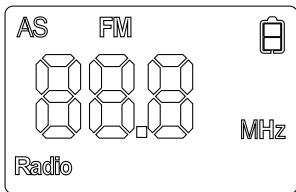
In **FM Tuning Mode**, press the  button twice on the C52. The device will automatically search for FM stations based on local signals. Please wait patiently until the search is complete.

When a stable channel is found, the C52 will pause on that channel for 1-2 seconds, and LCD display channel number such P01.

(these channels will be saved to the device upon completion of the search).

*Note that each time an automatic station search is conducted, any previously saved channels will be cleared.

When the C52 remains on a channel for an extended period, and the "FM" indicator at the bottom of the screen turns off while the "Radio" indicator lights up, it signifies that the automatic channel search has been completed. The C52 has saved the channel and returned to **FM Radio Mode**.



*The numbers representing the frequency may vary according to the actual situation.

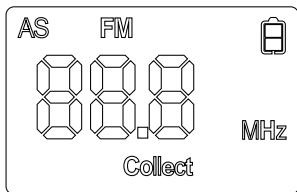
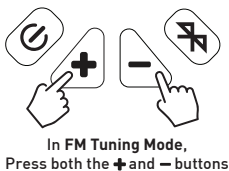
To enter **FM Tuning Mode**, press the  button again. At this point, you can select the saved channels using the **+** and **-** buttons. After choosing the desired channel, leave the device idle for 10 seconds. The C52 will lock onto that channel and automatically return to **FM Radio Mode**, where you can continue listening to the selected FM channel.

3. Collection and Retrieval Function:

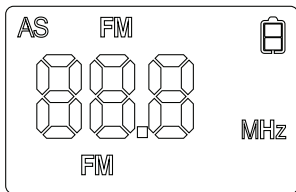
The C52 allows users to save their favorite FM channels. Saved channels will not be deleted during automatic searches and can be accessed and listened to at any time using the retrieval function.

Ensure the C52 is currently in FM Radio Mode.

- Press the  button to enter FM Tuning Mode.
- Use the **+** and **-** buttons to select the channel you wish to save.
- Press both the **+** and **-** buttons simultaneously to lock the channel and enter FM Collection Mode. You will hear a prompt saying 'Channel,' and the 'Collect' indicator at the bottom of the screen will light up, displaying as follows:



- The C52 provides up to 5 channel memory slots for favorites, which can be set through 4 simple steps.
Please follow the four simple steps we have listed:
"One-Two-Three-Four-Five."
- After the channel programming is set, up to 5 channels can be adjusted automatically by the C52 based on the received frequency, saved to the memory slots, and then the device will return to the FM Tuning Mode, with the screen display as follows:



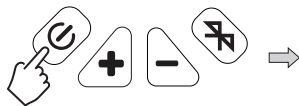
* The numbers representing the frequency may vary according to the actual situation.

- At this point, you have completed saving a channel.

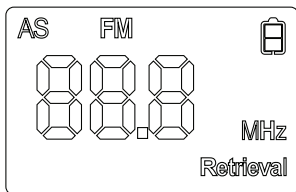
To use FM Tuning Mode, you must first set at least one channel in FM Tuning Mode, then follow the steps below:

Make sure the C52 is currently in FM Tuning Mode;

Click  to enter FM Tuning Mode and switch as needed: "Automatic radio station search," and the 'Retrieval' light at the bottom of the screen will turn on, displaying as follows:



In FM Collection Mode



- The C52 will start playing channels that have been saved in the FM Radio Mode. You can cycle through the saved slots by using the **+** and **-** buttons. The C52 will play a prompt sound for the corresponding position such as 'One-Five', and then it will play the content of the saved channel.

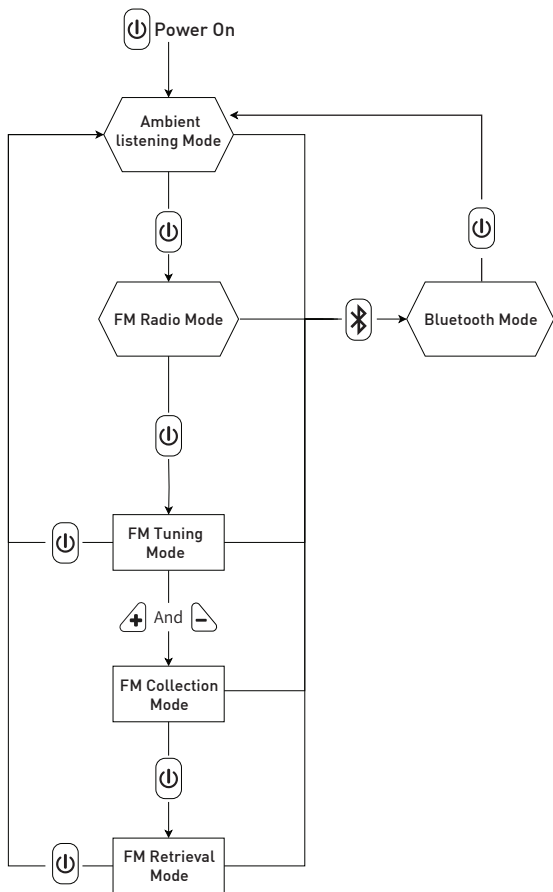
• Operations available in FM Retrieval Mode

Next channel	Press the + button
Previous channel	Press the - button

*Volume cannot be adjusted in this mode.

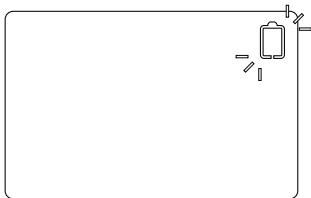
12. OPERATION DIAGRAM

When you want to switch to a specific mode, you can follow the operating methods as below.



13. BATTERY

When the device battery is low, "low battery" warning tone sounds once every 5 minutes, and the battery icon will flash to indicate the low battery status.



• Battery level 51% to 100%.



• Battery level 11% to 50%.



• Battery level below 10%.

- The device will automatically shut down when the battery empty.
- ⚠ Please do not attempt to open the battery compartment or replace the battery yourself.

14. CHARGING

Insert the USB-C plug of the charging cable into the USB-C charging socket of the product. Insert the USB plug of the charging cable into the USB port on a USB adapter (not included in scope of delivery)

15. SPECIFICATIONS

Specification	Parameters
Battery Life	32 hours
Battery Type	3.7V Polymer Lithium Battery
Battery Capacity	800mAh
Charging Current	280mA
Usage Current	15mA (70% volume during Bluetooth music playback)
Operating Temperature Range for Headphones	-20°C to 50°C
Storage Temperature Range (Complete Set)	-20°C to 50°C
Charging Temperature Range	0°C to 50°C
Supported Audio	Supports audio input from Bluetooth, walkie-talkie, and pickup microphone
Weight	387±10g

16. PACKAGING AND DIMENSIONS

- 1.Shipping Information: The product is suitable for transportation in its original packaging.
- 2.Size Range: S, M, L.

Adjustability							
Height H(mm)	H115	H115	H130	H130	H130	H140	H140
width W(mm)	W125	W145	W125	W145	W155	W145	W155
Size	S	S/M	S/M	S/M/L	M/L	M/L	L
M indicates earmuffs of 'medium' size range.							
S indicates earmuffs of 'small' size range.							
L indicates earmuffs of 'large' size range.							

NOTE: These earmuffs complying with EN 352-1 are of 'medium size range', 'small size range' or 'large size range'. 'Medium size range' earmuffs will fit the majority of users. 'Small size range' or 'large size range' earmuffs are designed to fit users for whom 'medium size range' earmuffs are not suitable.

17. CLEANING AND MAINTENANCE

Use a wet cloth with soap and warm water to clean the outer shells, headband and ear cushions.

NOTE: Do NOT immerse the headset in water. Certain chemical substances may damage this product. Contact the manufacturer for more information.

The ear cushions and foam liners may deteriorate with use and should be examined at regular intervals for cracking and leakage. Typical life for foam cushion sealing rings is 12 months. If an ear cushion is damaged, it should be replaced. See Spare Parts Section below.

18. REPLACING THE EAR CUSHIONS

- <1> To remove the ear cushion, slide your fingers under the edge of the ear cushion and firmly pull straight out.
- <2> Insert the foam liner.
- <3> Then, fit one side of the ear cushion into the groove of the ear cup and then press on the opposite side until ear cushion snaps in place.

19. SPARE PARTS AND ACCESSORIES

Ear Cushions&Foam Liners: S26A or S26B

Detachable Microphone: S10D

20. WARNING

- 1) To reduce the risks associated with harmful noise or chemicals: If instructions are not followed, bodily injury may result or protection may be severely affected;
- 2) When interference increases or the sound level becomes too weak, it is time to change the batteries;
- 3) Remove the batteries before you store the headset for long periods of time. A leaking battery may cause bodily injury or damage to the hearing protector;
- 4) These hearing protectors help reduce exposure to hazardous noise and other loud sounds. Misuse or failure to wear hearing protectors at all times when you are exposed to noise may result in hearing loss or injury;
- 5) If there is any drainage from your ear or if you have an ear infection, consult with your physician before wearing hearing protection. Failure to do so may result in hearing loss or Injury;
- 6) The product may be adversely affected by certain chemical substances. Refer to the manufacturer for further information.”;
- 7) Earmuffs, and in particular cushions, may deteriorate with use and should be examined at frequent intervals for cracking and leakage.
- 8) Fitting of hygiene covers to the cushions may affect the acoustic performance of the earmuffs;
- 9) The earmuff is provided with level-dependent attenuation, safety-related audio input. please check correct operation before use. If distortion or failure is detected, please refer to the manufacturer’s advice for maintenance
- 10) Please note that the performance may deteriorate with battery usage and the typical period of continuous use that can be expected from the earmuff batteries, when fully charged.
Please ref. BATTERY CHECKING AND CHARGING INSTRUCTION.
- 11) the output of the audio circuit of this hearing protector may exceed the exposure limit level.
- 12) The product shall not be used if it can’t be ensured that the input voltage doesn’t exceed the maximum value stated in APPROVALS EN352-8:2020 table 1

For proper use, see user instructions or contact EARMOR Technical Service via Email: cs@opsmen.com

21. APPROVALS

EARMOR® C52 have been tested and approved in accordance with EN 352-1:2020/EN 352-4:2020, EN 352-6:2020, EN 352-8:2020. ANSI S3.19-1974

ANSI S3.19-1974

EARMOR® C52 Headset Attenuation data, American National Standards Institute specifications: ANSI S3.19-1974

TEST FREQ.(HZ)	125	250	500	1000	2000	3150	4000	6300	8000	NRR (dB)
MEAN ATTENUATION(DB)	23.7	26.2	33.1	36.4	32.7	38.4	41.6	42.4	41.8	28
STANDARD DEVEATION(DB)	2.7	2.3	2.2	1.8	1.7	3.0	3.1	3.0	2.6	

EN 352-1:2020

C52 Summary Attenuation Data for Hearing Protective Devices according to EN352-1:2020

F(Hz)	63	125	250	500	1000	2000	4000	8000	SNR(dB)
MEANS	24.2	24.7	26.5	33.1	36.8	32.4	41.8	41.4	34
STD.DEV.	4.0	2.6	2.1	2.9	2.2	2.4	3.0	3.0	
MEAN-SD	20.2	22.2	24.4	30.2	34.6	30.0	36.4	36.1	

SNRm=35.3

SNRs=1.7

H84(dB) = 33dB

Hm = 35.1

Hs = 2.3

M84(dB) = 32dB

Mm = 33.7

Ms = 1.6

L84(dB) = 28dB

Lm = 29.3

Ls = 1.7

f: Test frequency
MEANS and SID.DEV.: Mean value and standard deviation at each test frequency
MEAN-SD: APV-value at each test frequency in accordance with EN ISO 4869-2:2018 with the parameter $\alpha = 1$
H-, M- and L-: Values in accordance with EN ISO 4869-2:2018 with the parameter $\alpha = 1$
SNR: SNR-value in accordance with EN ISO 4869-2:2018 with the parameter $\alpha = 1$
Hm, Mm and Lm/Hs, Ms and Ls: The mean values Hm, Mm and Lm calculated in accordance with EN ISO 4869-2:2018 and the corresponding standard deviations Hs, Ms and Ls
SNRm, SNRs: The mean value SNRm calculated in accordance with EN ISO 4869-2:2018 and the corresponding standard deviation SNRs.

EN 352-4:2020

Table1. EN352-4:2020 results for test ID Q8077A		
T-Criterion	M-Criterion	H-Criterion
106.5 dBA	113.0 dBA	115.3 dBA
Minimum-Impulse noise	Minimum-Impulse noise	Minimum-Impulse noise
85 dBA-PASS	85 dBA-PASS	85 dBA-PASS
Minimum-Non-impulse noise	Minimum-Non-impulse noise	Minimum-Non-impulse noise
94 dBA-PASS	96 dBA-PASS	97 dBA-PASS

STATEMENT:

- 1) The earmuff is provided with level-dependent attenuation. The user should check correct operation before use. If distortion or failure is detected, the user should refer to the manufacturer's advice for maintenance.
- 2) Please note that the performance may deteriorate with battery usage and the typical period of continuous use that can be expected from the earmuff batteries, when fully charged. please change the battery regularly.
Please ref. INSTRUCTIONS: Checking, Installing and changing Batteries

EN 352-6:2020

Table 1.Results

Max level	EN352-6:2020	
73.2 dBA	PASS	
Table2. EN352-6:2020 Bluetooth output levels		
ITU-T P50 F:	Level in muff (dBA)	
1999[dB FS]	Mean	SD
-35	47.9	0.9
-30	52.8	0.9
-25	57.3	1.2
-20	62.2	1.2
-15	67.2	1.3
-10	72.1	1.1
Max level (Mean+SD)		73.2

STATEMENT:

- 1) The earmuff is provided with safety-related audio input. The user should check correct operation before use. If distortion or failure is detected, the user should refer to the manufacturer's advice for maintenance.
- 2) the output of the audio circuit of this hearing protector may exceed the exposure limit level.

NOTE: Further guidance on how to use the information in above table can be found in EN 458:2016, 6.2.3.5 and Annex E.

EN 352-8:2020

Table Results

Max level	EN352-8:2020	
74.0 dBA	PASS	
Table2. EN352-8:2020 Bluetooth output levels		
IEC 60268-1:1985 noise (dB FS)	Level in muff (dBA)	
	Mean	SD
-35	49.3	1.5
-30	53.2	1.3
-25	58.0	1.2
-20	62.8	1.2
-15	67.8	1.2
-10	72.7	1.2
Max level (Mean+SD)		74.0

WARNING:

The product shall not be used if it can't be ensured that the input voltage doesn't exceed the maximum value stated in table 1

STATEMENT:

The audibility of warning signals at a specific workplace may be impaired while using the entertainment facility.

22. FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment. The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

23. AUDIO INPUT LEVEL

The audio level in the hearing protector is dependent on the audio input level. To prevent harmful noise levels, the hearing protector audio levels is limited to 82dB when connected to a Personal Music Player (PMP). If the hearing protector is connected to a PMP or other device with very high output level, it is the user's responsibility to set the audio input level to a safe level.

24. WARRANTY

EARMOR® C52 is warranted to be free of defects in material and workmanship for a period of 1 year from the date of original purchase.

The warranty is nullified in all of the following situations:

1. The product(s) is/are broken down, reconstructed and/or modified by unauthorized parties.
2. The product(s) is/are damaged through improper use.
3. The product(s) is/are damaged by leakage of batteries.

25. CE COMPLIANCE STATEMENT:

We, EARMOR®, declare under our sole responsibility that the EARMOR Headset complies with the essential requirements and provisions of the applicable European Union (EU) Directives and harmonized standards.

The product has been tested and approved in accordance with

EN 352-1:2020

EN 352-4:2020

EN 352-6:2020

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EARMOR® official website <http://earmor.com/> shall prevail in case of any product data changes.

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