



ASI AUDIO

*x Sensaphonics*

3DME

Three dimensional music enhancement

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*Puede encontrar las instrucciones en español en: [www.asiaudio.com](http://www.asiaudio.com)*

# WELCOME TO 3DME

## THREE DIMENSIONAL MUSIC ENHANCEMENT

3DME is a unique in-ear listening system that combines patented Active Ambient™ audio technology from Sensaphonics® with a powerful smartphone app to enhance listening and promote long-term hearing health.

The system includes:

### **3DME Active Ambient™**

**Earphones** - Universal-fit, dual driver in-ear monitors (IEMs) with embedded binaural microphones capture the ambient sound around you with full 3D directionality and three sizes of eartips to isolate your ears and deliver superb sound.

### **3DME Bodypack Mixer/Amplifier**

Connects and combines your sound source with the ambient mic feed to add 3D stage mic level to your monitor mix. The bodypack also houses powerful limiter and EQ functions. (When used without a direct monitor mix, you can still hear and control your customized ambient feed with full 3D directionality.) Note: The Power switch is on the bottom.

### **ASI Audio Smartphone App**

Program the bodypack and tailor your sound mix, levels, mic level, EQ and sound limiting, save custom presets, and performs an Audio Seal Test for proper IEM fit.

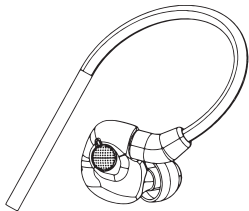
**Accessories also included:**

- 3 pairs of premium memory foam earphone tips (Small, Medium and Large)
- Battery charger with micro-USB cable for bodypack
- Audio cable: 12-inch jumper cable, stereo mini-plugs
- Programming cable system for bodypack (micro USB)
- Earphone cleaning tool
- Clothing clip for securing IEM cable
- Storage case

# HARDWARE AND FEATURES

## 3DME Ambient Earphones

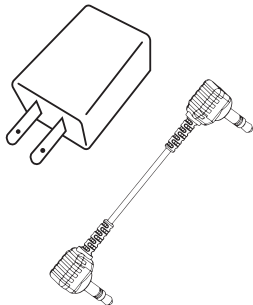
- Universal fit earphones with 3 sizes of ear tips
- Embedded ambient microphone system
- Universal-fit dual-driver design
- Embedded binaural ambient microphone system
- Includes 3 sizes of ear tips to ensure correct fit



*Earbud with tip*

## 3DME Accessories

- Audio jumper cable, stereo
- Programming cable, micro-USB
- Battery charger
- Cleaning tool
- Clothing clip
- Storage case

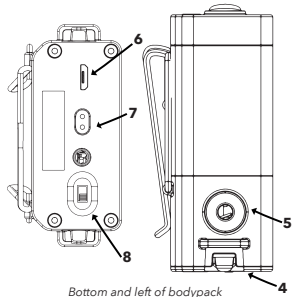
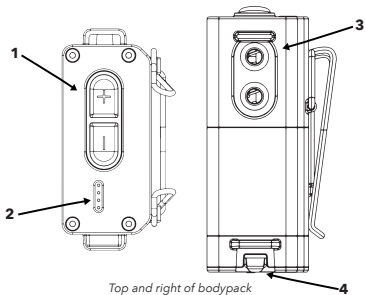


*Wall charger and jumper cable*

### 3DME Backpack Mixer/ Amplifier

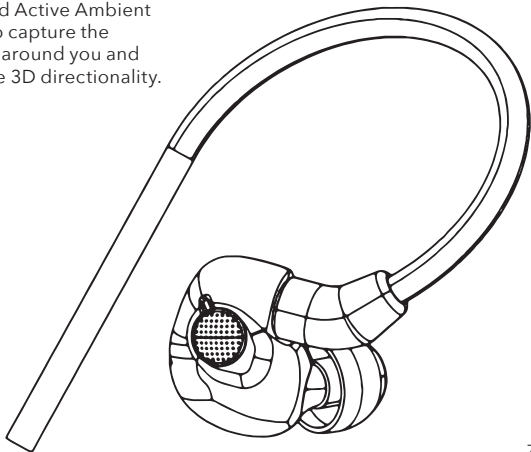
- 1** - Ambient volume control switches (+/-) (top panel)
- 2** - Battery status LEDs (4 LEDs) (top panel)
- 3** - Dual earphone jacks (right side)
- 4** - Cable management/strain

- relief (right and left sides)
- 5** - Monitor input mini-jack (left panel)
- 6** - Micro-USB charging/data port (bottom)
- 7** - USB power/charging status LEDs (bottom)
- 8** - Power switch (bottom)



## **GETTING STARTED:** CONNECTING YOUR 3DME AND ATTACHING EARTIPS

Your 3DME universal-fit IEMs have embedded Active Ambient microphones to capture the ambient sound around you and deliver accurate 3D directionality.



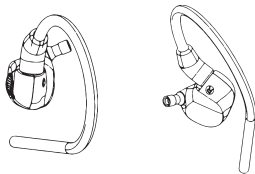
For rich, full sound, the earpieces must be fully inserted to achieve a full, tight seal. Three sizes of ear tips are included. NOTE: The earpiece cables are designed to run up, over and behind the ears, meeting behind the head.



*Memory foam ear tips, 3 sizes*

## **Installing Ear Tips**

1. Select an ear tip, holding it firmly between thumb and forefinger.



*Ear buds without tips*

2. Place the sound port (nozzle) into the core of the tip at a slight angle. As they join, straighten out the tip and push the tip as far back as it will go.

## **Inserting In-Ears**

1. Before inserting into the ear canal, observe left/right marking on the earpiece.



2. Roll the tip between your fingers to compress the foam into a thin cylinder.

3. Insert the tip as deep as possible without irritating the ear, positioning the cable to run up, over and behind the ear.

4. Hold the earpiece in place for 15-30 seconds, allowing the tip to expand and conform to your ear canal. This will create a custom fit and perfect seal - providing an optimal audio experience.

Step 1



Step 2



*Proper fit*

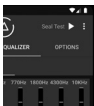
**Open the ASI Audio app.** Use the slider on the Mic Level Gain control to make the mic level louder or quieter.

Use the supplied audio jumper cable to connect a music source - with its level turned all the way down - into the monitor input mini-plug on left side of bodypack. Start the music and slowly increase the volume until you reach a comfortable level.

*Note: If the earpieces are inserted with the bodypack already switched on (not recommended), a brief feedback squeal may occur until the earpieces are fully sealed. For this reason, a safety limiter is engaged when the bodypack is first switched on, limiting the level of any possible feedback to its default setting (84 dB-SPL). Pressing either the + or - switch on the top of the mixer pack releases the safety limiter and restores your stored limiter threshold settings.*

## THE AUDIO SEAL TEST

If you have any doubts about your fit, use the Audio Seal Test to confirm that your IEMs are fully sealed.



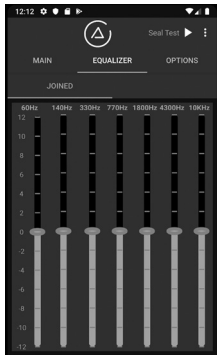
To access, tap the 'Seal Test' start button (triangle) found in the upper right of the ASI Audio app screen

In-ear monitors require a full seal of the ear canal for full bass response. A poor seal also reduces hearing protection and can enable acoustic feedback. The Audio Seal Test was developed by Sensaphonics to help users ensure proper fit and full seal.

During the test you will hear two alternating tones, one at 50 Hz and the other at 500Hz, each played at the same volume.

*If the ear canals are properly sealed, both tones will be clearly audible.*

*If the earpiece is not properly sealed, the 50 Hz tone will be much lower in volume, or even inaudible.*



## **Activate the Seal Test**

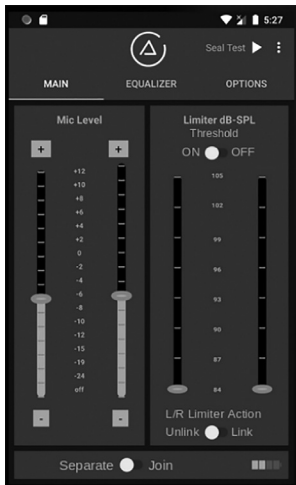
1. Go to Audio Seal Test in the ASI Audio app.
2. Connect smartphone or tablet and the 3DMEs to the bodypack and choose a pair of eartips, then fully insert the IEMs into your ears.
3. In a quiet room, tap the Seal Test button to start and stop the Seal Test tones.
4. Note the relative levels of the two tones and consult the chart on the next page.

## **Custom-fit option**

As part of the ASI Audio x Sensaphonics partnership, we offer custom-fit ear tips for 3DME earphones. These low profile, soft silicone tips are molded to the exact shape of your ear canal to provide a consistent, secure fit with a full seal for outstanding isolation and comfort. To find an audiologist and get fitted for custom molded eartips, visit [asiaudio.com/pages/gold-circle-audiologists](http://asiaudio.com/pages/gold-circle-audiologists).

What You Hear	Probable Meaning	What To Do
Both tones, clear & at the same level	Correct insertion with proper fit & full seal	Rock on! Proceed to the mic level, limiter, and EQ screens on the ASI Audio app.
Both tones, but the higher pitched (500 Hz) tone is much louder than the 50 Hz tone	Incomplete seal caused by poor fit of ear tip or by incomplete insertion. This is the most common problem.	Isolate problem to left or right earpiece, then try a different size or shape of ear tip. Review the IEM insertion procedure, then fully re-insert the earphone and repeat the test. If a full seal cannot be achieved, try different ear tips, both size and style, and repeat the test until a full seal is achieved.
500 Hz only; no 50 Hz bass tone at all	Very poor seal. A more severe version of the previous issue.	Review insertion procedure, fully reinsert IEMs, and test again. If a full seal cannot be achieved, try different ear tips, both size and style, and repeat the test until a full seal is achieved.
Other results	Problem likely not related to fit or seal	Contact your audiologist or ASI Audio.

# THE ASI AUDIO APP



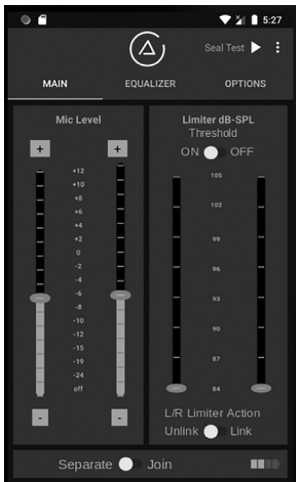
The ASI Audio app is the control center for Music Enhancement, with access to a suite of sound tools that let you customize the sound of your 3DME.

Download from the ASI Audio website, Google Play or Apple App Store (When Available).

After installing the app, connect your smartphone or tablet to the 3DME bodypack with the included micro-USB data cable. Open the app and power up the bodypack.

The app has 3 main sections: Mic Level & Limiter; Equalizer; and Options.

As you customize the Mic level, Limiter, and EQ to your preferences, settings are automatically saved to the bodypack and stay active until changed with the app.

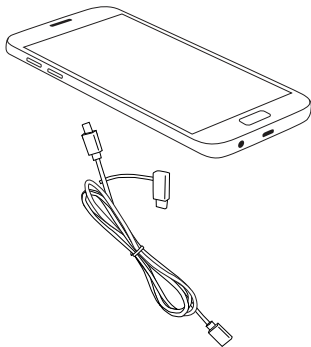


To access Presets and Help, tap the three dots in the upper right.

Presets and Help



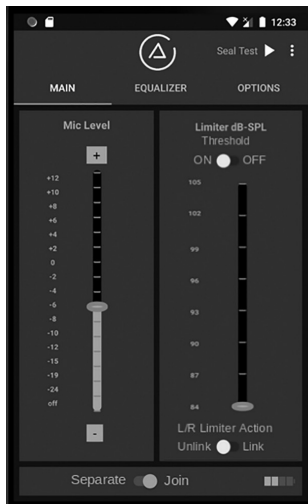
To access Presets, Help, and the Audio Seal Test tap the three dots in the upper right from one of the main screens. Battery status is indicated by the icon at bottom right.



*Device and programming cable*



# THE MAIN SCREEN



Includes controls for ambient mic level and limiter threshold.

Left and right channels may be treated as a binaural (stereo) pair, or adjusted separately by tapping the Join/Separate button. Joined L/R channels is the system default.

Note: The Join/Separate function applies globally to Mic level, Limiter Threshold, and EQ adjustment.

## Mic Level (Mic level Gain) and Limiter

The slider on the left sets the base level for the mic level in your monitor mix from the embedded microphones. (During performance, it can be adjusted with the +/- on the mic level sets the toggle mode values on the options screen.)

*Note: The 3DME's mic level feature can also be used by itself (without a separate IEM feed) for acoustic ensembles - essentially operating as a custom-tuned high fidelity earplugs with volume control.*

## Limiter Control

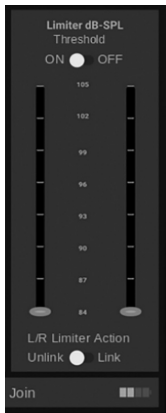
The limiter on the right side of the home screen is key to hearing health. Select the level where limiting begins, between 84 and 105 dB-SPL in 3 dB increments.

-Use the slider to set the threshold for limiter engagement

-Using the Link/Unlink button, the Limiter Action threshold can be Linked between L/R channels (default) or Unlinked for separate Left and Right thresholds

-Maximum volume reduction is 20 dB

-Limiter function can be turned off (not recommended!)



## Notes on limiting

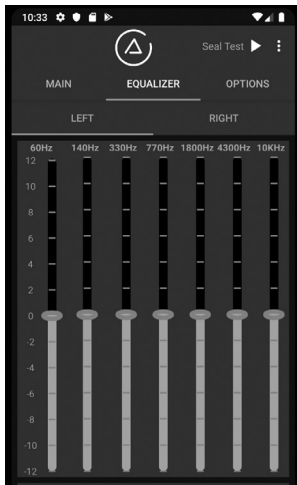
- The 3DME limiter is designed for music with adaptive attack, average responding, frequency selective operation.

- The Limiter Action Link/Unlink button determines if limiting action applies to both channels together (linked), or independently (unlinked).

Linking Action is independent of the Join/Separate function (used for setting the Mic level Level, Limiter threshold, and EQ).

- **Feedback/Safety Limiter: If the earpieces are inserted with the bodypack already switched on, a feedback squeal could occur until the earpieces are sealed.** A safety limiter is engaged when the bodypack is first turned on to limiting the level of any feedback. Press the + or - switch on the top of the pack to disengage the safety limiter and go to your stored limiter settings.

## THE EQUALIZER SCREEN



The 3DME lets you customize personal equalization via a 7-band EQ.

- Each band is adjustable from +12 to -12 dB

- If using separate channels, select left or right channel (above EQ sliders) to make desired settings

- To reset, use the Flat button below the sliders to return all values to 0

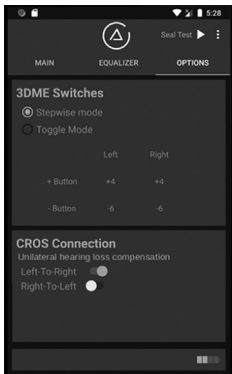


Save as Preset: save your custom EQ settings (along with your current mic level and limiter settings) by tapping Options > My Presets.

# THE OPTIONS SCREEN

## 3DME Bodypack Switches

This option allows you to program the (+/-) rocker switches on bodypack top panel as a toggle switch.



Stepwise Mode is the default setting. The + and - buttons change the volume of ambient sound in your mix one step at a time (+12 dB to -24 dB, plus Off).

Toggle Mode converts the +/- bodypack buttons into an A/B toggle switch between 2 ambience mic settings - one used while performing, the other for conversation between songs. Selecting Toggle mode activates a popup confirmation. Tap OK, then set the two levels you wish to toggle between: modest ambience mic level to be used while playing and a higher level for communication between songs.

1. On the Options screen, select Toggle Mode. A popup alert will appear.
2. To use toggle mode with your 3DME earphones inserted, use the number scrolls beside the + Button and - Button to set the two mic level levels you want
3. The system will save these to the 3DME bodypack automatically

### **Notes**

- *In Toggle Mode, the higher of the 2 ambience mic settings is assigned to the + button.*
- *Toggle Mode disables stepwise ambience adjustment. To return the buttons to normal operation, simply select Stepwise mode in the app. Switches remain in their most recent mode between 3DME sessions.*

- *In either switch mode, Left and Right behave according to your Join/Separate setting on the Main screen.*

### **CROS Connection**

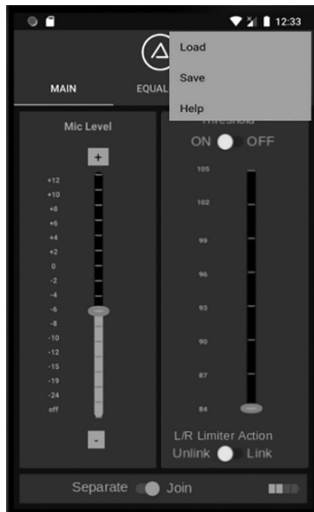
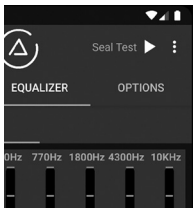
Uniquely, 3DME offers Cross-lateral Routing Of Signal. Most users will never need this feature, designed specifically for musicians with unilateral hearing loss.

In CROS mode, the bodypack routes the ambient audio from the non-hearing ear to the earpiece on the hearing side. This literally brings the missing half of the stage back into hearing for those with severe hearing loss on one side.

CROS functionality is activated via the app by simply tapping either left-to-right or right-to-left routing as appropriate.

## THE POPUP MENU - PRESETS AND HELP

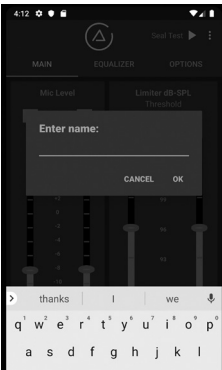
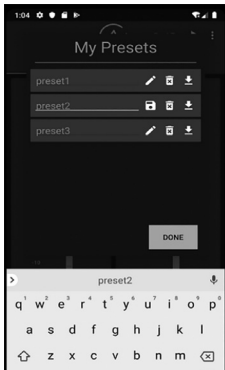
Tap the three dots in the upper right corner to load and save a preset, and open help.



## Save a Preset

While the 3DME automatically saves current settings for your next session, you can also save multiple presets for different situations.

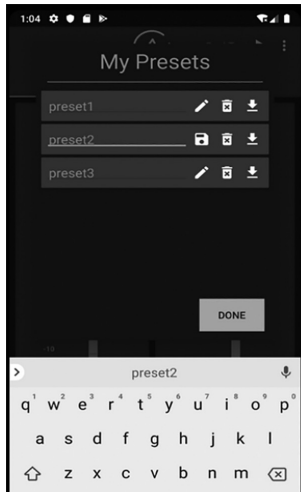
- Tap the 3 dots to open the popup menu
- From the popup list, tap Save and enter a name for your preset
- Tap OK





## Choose a Preset

- Tap the 3 dots to open the popup menu
- From the popup list (Load, Save, Help), tap Load
- Scroll the list to select a Preset and tap to activate



## **Rename a Preset**

- Scroll My Presets to find the desired preset
- Tap the “pencil” icon. and type a new name
- Tap the Save icon, then DONE to return to the previous app screen

## **Delete a Preset**

- Tap the “x-trashcan” icon to initiate deletion
- Confirm that you wish to delete the Preset and tap Done

## **Load a Preset to the Bodypack**

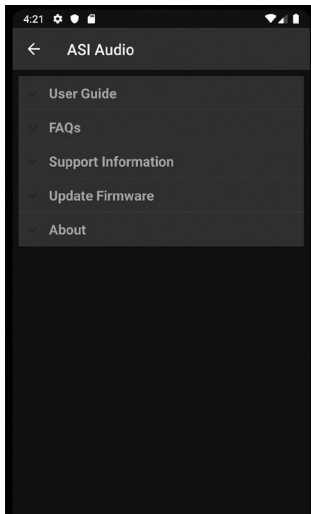
This downloads the selected Preset to the 3DME bodypack and replaces all current settings.

- Tap the “down-arrow” icon to send that Preset to the bodypack
- Tap DONE

## Help

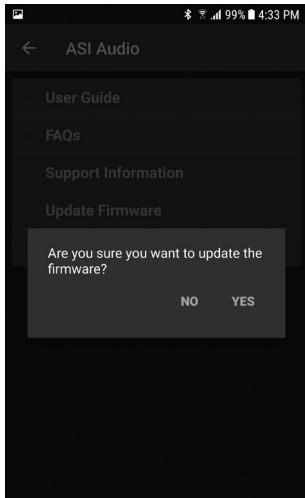
### Tap Help to find:

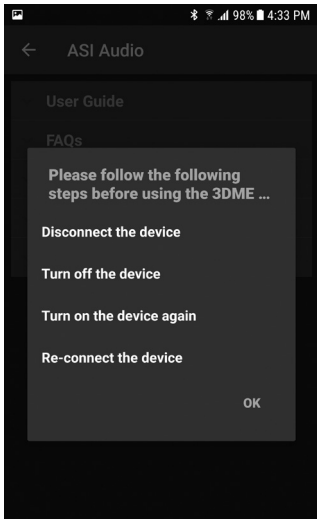
- User Guide
- FAQ
- Support Information
- Firmware updates
- About - bodypack serial number, warranty registration, app version, etc.



## Installing Firmware Updates

- Connect the 3DME bodypack to your device and open the ASI Audio app
- Open the popup menu (3 dots) and tap Help
- Select Update Firmware
- Follow the on-screen prompts to locate and download the latest firmware
- Wait until the "Installing Firmware" status is complete
- Follow the on-screen instructions to disconnect, power down, then turn on and re-connect the 3DME to complete the firmware update



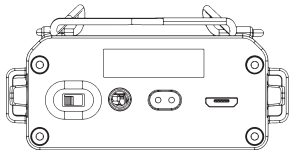


***Several app functions require an internet connection. This includes ASI Audio email and website links, firmware update, and software update.***

## CHARGING THE BATTERY

The 3DME bodypack is powered by a rechargeable Li-Ion (lithium ion) battery. The system is shipped with a partial charge, but you should fully charge the battery before your first gig.

Use the supplied cable to connect the bodypack's micro-USB connector (located on bottom of the pack) to a stable power source such as the supplied USB charger or a USB connector, or use the AC wall adapter.



Bodypack bottom

### Charging status

There are 2 LEDs next to the micro-USB port on the bodypack. The green LED lights to show USB power is present; the red lights to show active charging. When the red LED turns off, charging is finished.

### Battery Level

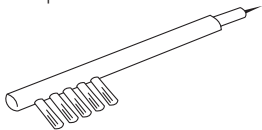
Status is shown by four small LEDs located at the top of the bodypack.

*Note: When battery life is very low, the last LED will blink.*

## CLEANING & MAINTENANCE

Keep the sound ports and ambient mics of your IEMs free of debris. Clogged sound ports can result in reduced levels and a muddy, muffled sound.

Also keep the ambient microphone grilles clear of debris build-up.



*Cleaning tool*

Daily Cleaning - Before or after each use, inspect and clean your earphones using the supplied cleaning tool. with the wire loop to remove earwax and other

debris that can build up inside the sound ports. Use the brush to sweep the sound ports and the microphone grilles. To clean the earpieces and tips, use a lint-free cloth or an alcohol-free cleaning cloth such as Audio Wipes.

For maximum life of your 3DME system:

- Do not expose to temperature extremes
- Avoid drops and strong impacts
- Do not submerge or immerse in water
- Keep away from dirt and debris
- Do not use at excessive volume levels
- Do not yank the cables when unplugging from the earpieces, bodypack or mobile device

## ABOUT SAFE SOUND LEVELS AND HEARING PROTECTION

Music induced hearing loss (MIHL) is a function of average noise level, exposure time, and the peak level of very loud sounds. Statistically, long exposure to average levels over 85 dB puts the ears at risk of long-term injury. Whether working acoustically, using floor wedges, or in-ear monitors (IEMs), virtually all musicians are at risk.

The following table shows recommended daily noise exposure limits on the OSHA and more conservative NIOSH scales. Under optimistic OSHA exposure limits, 2 hours at 100 dBA is the safe limit without protection - and this assumes no levels over 85 dB

the rest of the day. For your safety, we strongly recommend using the NIOSH guideline.

The chart shows level effects for the "average" person, but some people are more susceptible to hearing loss than others. Statistically, OSHA guidelines (developed for industrial workers) prevent long-term hearing injury in about 76% of people, while NIOSH guidelines protect a robust 93%.

With its isolating earphones, powerful processing, and Active Ambient microphone system, 3DME can help swing the odds in your favor.



## SAFE EXPOSURE TIME

Level, dba	85	88	90	91	94	95	97	100	105	110	115
NIOSH	8 hr	4 hr		2 hr	1 hr		0:30	0:15			
OSHA	16 hr		8 hr			4 hr	3 hr	2 hr	1 hr	0:30	0:15

### Isolating Earphones

Properly fitted IEMs enable safer monitoring by reducing unwanted sound so users hear more clearly at lower volume levels. However, studies show conclusively that, without guidance, IEM users tend to monitor at the same volume they use for floor wedges. But with a little discipline and practice, you can get full, rich in-ear sound at amazingly modest volume levels. We urge you to make a conscious effort to turn it down.

### ASI Audio App

The 3DME App helps keep levels under control in two ways: with a Limiter and Equalizer (EQ). The Limiter reduces excessive volume peaks above a dB threshold that you set. The EQ function lets you customize your sound by emphasizing (or reducing) specific frequency ranges, minimizing the need to turn up the overall level.

## **Your hearing is your livelihood.**

With its embedded binaural microphone system, the 3DME adds a controlled amount of stage mic level to the monitor mix with natural 3D directionality, which is especially effective for acoustic musicians. When used without a monitor mix, 3DME still acts as customized high-fidelity hearing device, with the ambient stage sound EQ tuned the way you like it at levels you control.

***The 3DME was designed for use in controlled stage environments. Please exercise extreme caution when operating a motorized vehicle or heavy machinery, while bicycling or jogging near traffic, or in any potentially hazardous situation.***

We strongly urge all musicians and engineers to have annual hearing checks from a certified audiologist. By tracking your hearing over time, you can spot any changes and deal with them before serious damage occurs.

3DME is a powerful tool, but no product will prevent hearing injury if you don't stay within established exposure guidelines. Again, we can't stress this enough: ***See your audiologist regularly!***

## TECHNICAL SPECIFICATIONS

Frequency Response	30 Hz - 12 kHz
Microphone Input Overload	135 dB-SPL
Maximum Output, 500 Hz	122 dB-SPL
Microphone Equivalent Input Noise	27 dBA-SPL
Monitor Equivalent Input Noise	-104 dBV(A) (EQ disengaged), -101 dBV(A) (EQ engaged)
Output Noise	20 dBA-SPL (EQ disengaged), 23 dBA-SPL (EQ engaged)
Acoustic Insertion gain	Off, -24 dB to +12 dB in 16 steps
Monitor Sensitivity, 500 Hz	104 dB-SPL for -20 dBV (100 mVrms) input
Monitor Input Impedance	10 kOhm
Limiter Type	Adaptive attack, average responding, frequency selective (approximate A-weighting)
Limiter Threshold	84 dB-SPL to 105 dB-SPL in 8 steps and Off
Maximum Limiter Gain Reduction	18 dB
Multiband EQ	+/-12 dB at 60, 140, 330, 770, 1800, 4300, 10000 Hz
Latency	0 (EQ disengaged), 350 $\mu$ sec (EQ engaged)
Operating Time (from full charge)	>7 hours
Charge Time (fully depleted battery)	~4 hours
Battery State-of-Charge Indication	Four LEDs, with flashing low battery warning

## **SUPPORT**

We are grateful you have decided to be proactive about hearing health.  
Talk to us:

ASI Audio Customer Service

Toll Free: 833.274.2244

Local Customers: 216.970.7873

Email: [customerservice@asiaudio.com](mailto:customerservice@asiaudio.com)

Web: [www.asiaudio.com](http://www.asiaudio.com)

## **Limited 1-year Warranty**

ASI Audio warrants the 3DME IEM and 3DME Bodypack against defects in material, design and workmanship for a period of one year from the date of original purchase from ASI Audio or an authorized ASI reseller or distributor. ASI will repair or replace the defective product at its option if returned, within the warranty period, to our service facility in Beachwood, OH. This warranty is in lieu of other warranties, expressed or implied, including, but not limited to, any implied warranty or merchantability of fitness for a particular purpose.

## **Requesting a Repair**

If your product is not functioning properly, please review our Frequently Asked Questions page at [www.asiaudio.com](http://www.asiaudio.com) to help identify and address the problem. If it is necessary to return your product for warranty or post-warranty service, please use the Return Form and Instructions found on our website. Warranty repairs require proof of the date of purchase. Address repair emails to: [customerservice@asiaudio.com](mailto:customerservice@asiaudio.com).

## **Register Your Product**

Register your 3DME through the ASI Audio app Help menu or visiting [asiaudio.com](http://asiaudio.com).

## About ASI Audio

ASI Audio, Inc. is the result of a partnership between Sensaphonics, Inc. and Think-A-Move, Ltd. By combining the patented Active Ambient™ technology developed by Sensaphonics with Think-A-Move's expertise in product/app design and manufacturing, we have created 3DME, a next-generation IEM product that takes you beyond mere monitoring to music enhancement.



ASI AUDIO  
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