

Peersonic BatWav PCM384 training player.



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The Peersonic BatWav training player is designed to play back full spectrum recordings in the ultrasonic spectrum, using a broad spectrum acoustic transducer.



Ultrasonic playback of social and echo navigation calls can be then used for training, and the replay device potentially used for other playback purposes. ...

Files are saved to a USB FLASH drive and played by the amplifier unit, this has a response range of 10Hz to 192kHz limited by the sample rate (384ksamples/second).

The L010 speaker has an effective response over 100Hz to 100kHz.

A second transducer in development extends the upper range to 140kHz. TBA.

File format is stereo 384kHz WAV (PCM), 16 bit. Up to 16 files may be played back on a single USB drive. More would become confusing on a single drive, but as playback is mono two sets of recordings can be stored using the left and right channels, giving 32 max. Files may be of any practical length. However USB drives are cheap so you can use as many as you like, one at a time!

Functions :

Reset : Returns to “wait for play command”.

Loop : Plays all files through and continues again from the start. Stop by pressing Reset.

Play All : Plays all files through to the end and stops.

Single : Plays each file singly. Steps through one by one to the end on each button press.

L/R : Switches between left and right stereo channels.

SK Filter : A band pass filter set at 10kHz and 140kHz reduces unwanted and unplayable noise, this can be switched out.

Typical Use as a training tool :

Power is delivered by a 12V to 18V mains laptop style 2 Amp supply (negative ground). Or by a 12V external battery pack. Maximum voltage is 18V.

Insert a prepared USB Flash drive.

Plug in power and turn on.

On power up the single multicolour LED will glow dim purple, the boot up time is about a minute, please wait patiently.

When ready the LED will be bright magenta. Note if the USB stick was not inserted the colour is cyan. It is not essential to have the USB drive inserted during boot.

Magenta indicates that the unit is in idle mode and ready to go.

Pressing RST at any time will return to idle once the current file has finished playing.

Once the unit has booted on a drive, it is not necessary to reset the power when changing drives, just replace the drive, and within a few seconds the reset light will flash and you are ready to go again.



- Press the “Loop” button – the led will go green for 3 seconds, then go off. The unit will play through all files , looping back around. To stop, press the Reset button and wait for the sequence to end, returning to LED off.
- Press the “Play All” button – The LED will go blue and play through the entire sequence once, then return to LED off and finish.
- Press the “Single” button – The LED will go red, but then flash once the first file is played. Press again and again to step through each saved recording. At the end of the collection the LED will go off and finish.

Volume control :

It is best to set this about a quarter of the way round, too much gain could cause the speaker to saturate, and if there is still unwanted noise in the recording it will cause the amplifier to get hot. In the worst case nothing bad will happen, the amp could switch off, but before that you would find the case getting warm as well as a lot of audible noise from the transducer. Fairly obvious then to turn it down a bit. Use as you would a domestic stereo player. Only problem is that you cannot as a human being hear sound distortion, so be mean with the volume control.

The Speaker (transducer) :

As this is remote the BatWav can drive a variety of transducers, each one must be qualified.

Initially the L010 is cased in a solid nylon turned enclosure and waterproof.

This has a nominal 1000Hz to 100kHz response curve.

As often with Peersonic equipment, there is a tripod thread to make it convenient for classroom training sessions, it can be positioned high up so reducing attenuation by front line students in the classroom.



Other transducers are in development, but a 10kHz to 140kHz unit is in advanced stages, this would be useful for Lesser Horseshoe playback and other HF bats.

Files :

It is important that playback files are “clean”, in the correct format and in some cases equalised to match the full range speaker characteristics.

Why?

Take your best recording of, perhaps a myotis species.

Your very best recording has a nice sample of the sound, and it is well defined and not saturated (clipped).

However, the recording contains much noise outside of the range of interest, this will load the amplifier, which will happily play the rubbish as well as what you need.

No transducer is flat across the entire range of 10kHz to say 140kHz, so some compensation is required for this, and other artefacts, in order to make an efficient replay.

Therefore the Peersonic policy is currently :-

Peersonic will supply a library of useable files.

If you need specific files outside of that I can clean up and make available from your own recording. Some few at no cost if I add to the Peersonic library, as the library gets full of UK bat sound there will come a stage where a processing fee will be applied. In this case, recordings can be privately owned, or at a reduced processing fee made public. I am thinking about £10 per file or something like that when it comes to it.

You can also clean up and process your own files. A separate user PDF /will be/is/ available for that, and I would be happy to provide some training where needed.

As a quick guide. Files must be 16bit, stereo and naming must be with no spaces.

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