



Anti-Mode 2.0 Dual Core FAQ



Revision History

Rev.	Date	Author	Affected chapters	Description
1.0	05/12/11	POj	All	Original version English

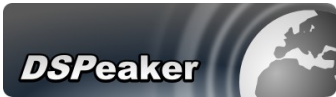
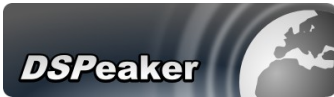


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Anti-Mode 2.0 Dual Core FAQ

Disclaimer:

Information in this FAQ is a preliminary and subject to change without notice

1. Frequently Asked Questions w/ Answers

1.1. What is Anti-Mode 2.0 Dual Core?

The Anti-Mode 2.0 Dual Core room correction system can be used to correct any stereo audio system automatically.

The new Anti-Mode Dual Core can be inserted between a pre-amp and a power amp or active speakers. With automatic calibration and built-in TFT screen to display the room measurements, it offers the unmatched ease of use DSPeaker is famous for around the world.

In addition to analog inputs and outputs, Dual Core also offers remote control, USB DAC, TOSLINK digital input and output, volume control and versatile EQ functions.

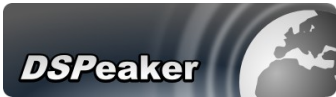
1.2. How does Anti-Mode 2.0 Dual Core differ from the Anti-Mode 8033?

Anti-Mode 8033C and Anti-Mode 8033S are for subwoofers only, the correction frequency range is limited to 16..144Hz, and pass-through range to 5..160Hz (8033C) and 5..250Hz (8033S). There is only one channel, although 8033S allows two inputs to be combined before processing. This allows 8033S to be usable in 2.1 systems that do not have a crossover or dedicated LFE output.

Anti-Mode 2.0 Dual Core supports two full-range channels that can be corrected independently: two speakers, two subwoofers, or a crossover (highpass and lowpass). Inputs and outputs have both XLR and RCA, so you can connect either balanced or unbalanced devices.

Dual Core uses two DAC's and ADC's per channel and the volume control is digitally controlled differential analog volume control, which improves the dynamic range of the system considerably having near constant SNR+THD for wide range of output levels.

There is also a proprietary interface to connect two (or more) units to realize 2.2 systems when such firmware becomes available.



ANTI-MODE 2.0 DUAL CORE

There is a color TFT display to show the results of room measurements, and remote control to adjust volume and other options. You can select settings from multiple profiles, adjust lift, tilt, pre-set curves and custom filters.

You can also use Dual Core as USB DAC, and there is optical TOSLINK input and optical output for additional digital interfacing.

But all the important features are carried over from Anti-Mode 8033. You don't need a computer to set up or use the Dual Core, and the fully automatic calibration makes installation easy and quick.

1.3. Is "Dual Core" referring to the use of one Audio DSP per channel?

Yes, that is right. Of course there are also dual ADC and DAC per channel.

1.4. Coaxial s/pdif (RCA) sounds better than optical toslink in our ears and due to the listening tests we have done in the past. So why do you use optical?

Our system does not derive its digital to analog converter (DAC) clock from the digital input(s), so jitter in the input is not a problem. Any jitter in the input gets removed in the process, so there is no difference between the quality of coaxial and optical input in this respect.

The huge advantage of using optical is that there is no ground connection between devices.

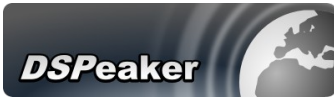
1.5. What is the sampling frequency on S/PDIF, analog and USB?

The S/PDIF receiver supports the standard PCM rates 32kHz/44.1kHz/48kHz plus 96kHz with upto 24 bits, whatever comes from the source. The S/PDIF receiver can also be configured to support 192kHz. We are not sure if 192kHz will be enabled in the first firmware version.

Analog input rate is by default 48kHz.

Technically USB Audio supports several configurations from 44.1kHz/32-bit through 192kHz/16-bit. The most useful rates will be provided, the default is 44.1kHz/48kHz with 24 bits.

The audio processing is performed in 32-bit domain, so 24-bit with 48kHz rate is optimal.



1.6. What USB version does the USB DAC mode support?

The hardware is USB 1.3 (Full Speed), several USB Audio configurations can be supported. The default is 24-bit 44.1kHz/48kHz.

1.7. Does the DSPeaker Anti-Mode 2.0 Dual Core only work on digital systems? My stereo system has vacuum tubes and no subwoofers.

Anti-Mode Dual Core has both analog and digital inputs and outputs, so it fits excellently with your existing system.

1.8. Can Dual Core be used between a source like the cd player and the cd input of the amplifier? How does the volume control inside the amplifier influence the result?

It is a good way to connect Dual Core. In this way the signal level can be kept as high as possible in Dual Core inputs and outputs until the power amplifier. But it depends on the system if this gives better results than using Dual Core volume control.

There is analog volume control in Dual Core for systems that do not have volume control in the amplifier(s).

1.9. Is it possible to use Dual Core directly as stereo pre-amplifier?

Yes, you can select between analog and digital inputs and adjust the output volume with a remote control. You can connect Dual Core directly to power amplifiers or active speakers.

You can also select between analog and digital outputs.

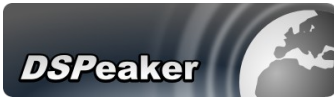
Multiple configurations are saved, so you can recall different settings easily.

1.10. Is it possible to correct up to 500Hz and do bypass over 500Hz?

Anti-Mode parameters can be configured, and the correction bandwidth can be set upto 500Hz. There are no automatic corrections above 500Hz.

1.11. How can the response be adjusted by the user ?

You can first perform the automatic Anti-Mode calibration and either use or disable it. Then the response can be customized with lift and tilt tools, preset target/house curves and custom filters.



1.12. How many filters can be used per channel?

Each filter has a freely selectable center frequency, bandwidth and gain. You have 32 filter slots. Each low-frequency filter takes one slot and a full-rate filter takes 6 slots.

In addition there are lift/tilt filters and preset target/house curves.

1.13. In which frequency range can adjustments be made?

Anti-mode correction range is configurable upto 500Hz. Manual adjustments can be made over the full range, from about 5Hz upto 20kHz.

1.14. Can I set up a 1.1 system with LP / HP cross-overs at 90Hz and have Anti-Mode correction on BOTH the LF and HF to a user specified frequency ?

Yes, both channels have Anti-Mode correction upto 500Hz (configurable), and one channel can have low-pass while the other has high-pass.

1.15. Does the Anti-Mode 2.0 Dual Core also add a 3ms delay on the signal?

Dual Core also introduces a delay, which depends on the audio input and output selected (analog, digital, USB). Output channel delays will be automatically matched, and more delay can be added with Dual Core delay controls.

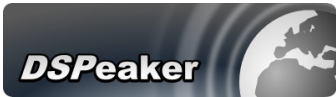
1.16. Can Dual Core correct two individual subwoofers?

Yes. You achieve the best results with mono LFE. In this case Dual Core first matches the delays of the two subwoofers (or two sub groups), then calibrates the subs and the room as a system. This way any nulls/dips in the response of one sub can be 'filled in' by the other sub, which is not possible when calibrating the subs separately.

You can also calibrate two subwoofers (or sub groups) for stereo LFE. The delays are matched also in this case, but corrections are separate for each sub. This is analogous to the normal stereo operating mode with low-pass set for each channel.

1.17. Will Anti-Mode 2.0 Dual Core come with a microphone?

A microphone is certainly included. It will have the same very consistent microphone capsule than before.



1.18. Is there a multichannel version in the future?

You will be able to combine two or more DualCore units together for 2.2 and other configurations. This linking will not be available in the first firmware version.

1.19. How can Dual Core be updated?

Dual Core can be updated through USB.

1.20. When will the first units ship?

Our current estimate for the first shipping date is late Q1 / 2012, i.e. March 2012.

2. Other questions?

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