



# The Tactile Comparison

## ButtKicker® LFE, Crowson TES-100 and BMP-3S, and Totem Drum

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### A Three-Way Tryst Of Tactile Transducers

Tactile motion is nothing new to the home theatre arena, but the technologies behind it have only recently begun to mature. Today, the best tactile devices are designed to seamlessly fit in your home theatre, filling that physical void that separates a movie and reality.

This review will compare and contrast three tactile subwoofer systems that convert bass signals into vibration. This is accomplished by connecting the appropriate output of your surround processor (typically LFE) to a special amplifier, and then on to the device, via typical loudspeaker cables. These devices are then positioned underneath your chair or sofa's legs (as with the ButtKicker and Crowson models) or under the seat cushion (as with the Totem Drum). They vibrate in accordance with the film or music audio track, exciting the chair, sofa, or cushion, to provide a whole new sensory experience to the audience. In contrast, the D-BOX Motion Simulation System (reviewed in Issue 65, October 2002) does the above but adds real lateral and forward and backward and vertical movement in sync with the sound and the picture.

I tested all three of these systems using *Matrix Revolutions* and *U-571*, comparing ease of set up, strengths and weaknesses of the brand, and how strong and tactile the movement was. I also tested the devices with an Eric Clapton concert DVD, as a comparison between movies and pure music.

The three products involved achieved their goals with slightly different routes.

The ButtKicker LFE's exciter is mounted to an optional platform, which then extends under the foot of your chair or sofa. The energy is then transferred to the foot transversely, literally shaking the chair sideways.

The Crowson TES-100 sits directly beneath the chair foot and transfers its energy vertically, for a piston motion.

The Totem Drum is designed to go beneath a cushion, and the energy transfers through the cushion to the user sitting directly above it.

All three derive their power from dedicated amplifiers, although it would be possible to use any sufficiently powerful amplifier in suitable systems. The amplifiers are connected to the exciters using standard loudspeaker cables.

The ButtKicker amplifier is the most prodigious of the three, delivering a claimed 1100 watts into 4 ohms. The Crowson offers 170 watts into 6 ohms, and the Totem, 100 watts into 8 ohms.

Control of the power is also achieved by different approaches.

The ButtKicker system provides the most comprehensive set of options and instructions. The documentation is excellent and makes setup totally painless. The amplifier has a volume control and a crossover frequency control to help dial-in the appropriate levels and frequencies. Also provided for this review was the optional wireless send-and-receive unit, which allows you to place the amplifier near the sofa, picking up the signal from the processor wirelessly.

The Crowson amplifier has volume control for each of two channels and an internal 200 Hz low-pass filter. Crowson also supplied their BMP-3S stereo preamplifier, which provides for separate left and right signals to be fed from the processor to two individual transducers for stereo tactile effects. The BMP-3S also uses a variable low-pass crossover to feed the appropriate frequency range to the TES-100 from the full-range left and right signals (the LFE information is mixed into both channels).

## SPECIFICATIONS

### ButtKicker LFE

Model #: BKA1000-4  
 Amplification: 1100 Watts @ 4 ohms; 2100 Watts @ 2 ohms  
 Technology: Class D switching  
 Crossover: Variable high cutoff, 40 to 160 Hz;  
 Low cutoff, 25 Hz switchable  
 Inputs: RCA and 0.25-inch with 160-mV and 1.25-Volt sensitivities  
 Outputs: Five way binding post  
 Nominal Impedance: 4 ohms (ButtKicker LFE)  
 Power Handling: 400 watts min. / 1500 watts max. (ButtKicker LFE)

Dimensions (WH In Inches): 5 x 5.375 (oval)  
 Frequency Response: 5 - 200 Hz  
 Weight (In Pounds): 11  
 Price: \$599

### Manufactured In The USA By:

The Guitammer Company Inc.  
 Post Office Box 82  
 Westerville, Ohio 43086  
 Ph: 888 676 2828  
 www.thebutt kicker.com

### Crowson TES-100

TES Kit Max Load (In Pounds): 1000  
 Nominal Impedance: 6 ohms  
 Power: 50 watts (min); 500 watts (max)  
 Frequency response 1Hz - 500 Hz (transducer);  
 down to 1 Hz ( $\pm 1$  dB; amplifier)  
 Amplification: 85 watts RMS per channel @ 6 ohms; 170 watts RMS bridged @ 6 ohms

Dimensions (WHD In Inches): 19 x 3.5 x 7.5  
 Weight (In Pounds): 12 (amplifier); 3.5 (transducer)  
 Price: \$649 (TES-100 Couch Kit), \$499 (A200 Amp), \$249 (BMP-3S Pre-Amp)

### Manufactured In The USA By:

Crowson Technology, LLC  
 6440 Via Real, Suite 3  
 Carpinteria, California 93013  
 Ph: 888 427 6976  
 www.crowsontech.com

### Totem Drum

Nominal Impedance: 8 ohms  
 Aluminum Cooling System  
 Drum Amplifier: Frequency response 10Hz - 150 Hz; 100 watts RMS, 400 watts Peak  
 Drum Module: 100 watts RMS, 400 watts Peak

Dimensions (WH In Inches): 3 x 10 (cylinder)  
 Weight (In Pounds):  
 Price: \$900 (Amp & Drum)

### Manufactured In Canada By:

Totem Acoustics  
 9165 rue Champ D'Eau  
 Montreal, Quebec, Canada H1P 3M3  
 Ph: 514 259 1062  
 www.totemacoustic.com

"It Should Come As No Surprise That These Devices Can Be A Lot Of Fun..."

The Totem simply has a volume control and all other adjustments are recommended to be made via the surround processor.

## Setup

The couch used for this review was a two-seat sectional with a wooden frame and four wooden feet. The seat cushions were 8 inches thick, and the back cushions were 6 inches deep. The couch sat on 1-inch thick carpet, under which was a foam underlay on top of a wooden, suspended floor.

My reference system was comprised of a Myryad MXD7000 preamplifier/processor, a Myryad MXA5150 power amplifier, a Pioneer DVD-410 DVD player, and the Genesis Advanced Technologies 6.1 loudspeaker system. The Myryad processor has additional programmable outputs that allowed me to configure the signal to the transducers in a variety of different ways. I experimented with summing all the low frequency information, LFE, left, right, center, sides, and rears to one channel at different low frequency points. I also channeled the left loudspeaker's low frequencies (front, side, and rear) plus 50 percent of the center and LFE to one output and the right channel's low frequencies, plus 50 percent center and LFE to the other. This gave me stereo low frequencies for the ButtKicker LFE and provided information from each of the channels from a multichannel source. The Crowson BMP-3S did this with 2.1 channels of a multichannel source for the TES-100's.

## Listening/Feeling Experience

First of all, some general observations:

### Isolation

By their very nature, these devices require an efficient means of transferring energy. The more accurately the energy is transferred to the listener, the more tactile and immersive the experience can be. However, isolating these devices from everything other than the piece of furniture you are sitting on is difficult, if not impossible. It's here where the Totem scores most highly. Because you are sitting on top of the actuator, the vibrations are very direct. The ButtKicker sits on a platform that rests on the floor with rubber isolators underneath and, as mentioned before, transfers its energy sideways. This does not seem to be a very efficient or direct method of energy transfer. A lot of energy ends up in the floor, the walls, and eventually the whole house. The fact that they provide an 1100-watt amplifier means that a lot of energy makes its way into the couch, but a lot also goes

into the surrounding environment. The Crowson has the most logical approach, placing the transducers directly beneath the two rear feet of the couch (The ButtKicker LFE and Totem Drum came as single units, although more could be added). The energy transfers directly into the floor and couch, and since the couch provides less resistance, due to the lower mass, the effect is significant. The lower-powered amplifier, however, seemed to be a weakness, exerting, it seemed, less precise control of lower level effects.

### Level

More is not necessarily better.

It should come as no surprise that these devices can be a lot of fun as both an added tactile dimension to movies and musical experiences, or even as an amusing parlor trick to wow friends and neighbors. What did come as a surprise was the fact that, after the fun, came appreciation. As with all low-frequency devices, subwoofers, equalizers, etc., it takes a while to get these things tuned in. My own personal preference with subwoofers, for example, is to turn them down until you can barely tell that they are on. It is only when you actually turn them off, and the profound collapsing of the soundstage and dimensionality occurs, that you realize how much effect they were actually having. Of course, the better the subwoofer, the more noticeable this effect is. Well, these exciters do exactly the same thing. They are all "wham-bam-thank-you-ma'am" at the wrong level and quietly awe-inspiring at the right level. The good news for everyone is that you can set them wherever you like and fiddle around until you're happy.

### Frequency Range And Directionality

Just because these things are not meant to make any sound, it does not mean they don't. The higher you set the crossover frequency, the more direct noise they made, and it really was noise. At 200 Hz and above, these things sound horrible and draw unnecessary attention to themselves. Keep the crossover frequency down below 100 Hz, and they work much more elegantly. Of course, there is much more happening above 100 Hz, so it's tempting to go after the biggest return, but beware.

### Performance

I kept the software choices simple. After finding the right levels for my reference CD—Jennifer Warnes, *Famous Blue Raincoat*—I listened to an Eric Clapton DVD, *One More Car One More Rider* and

then moved on to *Matrix Revolutions* and *U-571*. I played the same cuts repeatedly though a variety of combinations.

I started with the ButtKicker LFE. This comprised of one exciter, one amplifier, one couch accessory kit, and one LFE cable kit. The instructions were clear and comprehensive, and the system could be set up in minutes. I also added ButtKicker's RF wireless kit, which enables you to position the amp near the exciter and receive the signal wirelessly. This is very useful if you want to avoid running loudspeaker cables to the exciter attached to the couch.

I did find problems with the RF wireless kit, however. On the *Matrix Revolution* cut at very high levels, I'm sure there were spurious vibrations not associated with the soundtrack. At more modest levels they were not immediately noticeable (adjusting the modulation levels did not solve the problem). It's possible that something else in my system may have been interacting over the RF band, which is always a problem when using wireless devices. In the end, I performed all of the tests using a hard-wired system.

The ButtKicker system certainly kicks butt! The amplifier is hugely powerful and exerts fine control over the motion transmitted to the couch. Tiny and fast vibrations are felt when required, fat and slow ones when needed. Adjusted to the right level, the results were never intrusive and always welcomed. I used to think of this kind of device as a joke, but I was wrong—the ButtKicker can add a sense of emersion that subwoofers alone cannot. My only disappointment was that two exciters were not supplied for the review!

The key to getting the best experience for me was to keep turning the level down until I thought it was off. Then, half way through a cut I would turn the signal off and on and "wow," what a difference. The supplemental sense of bass was so great that it added dimension to the film. In *U-571*, when the depth charges are exploding all around, you feel as if you are a part of the action, with the creaks and groans from the ship's hull all around and underneath you. Great stuff.

The Crowson was a different beast. Because it uses two transducers that sit directly beneath the rear feet of the couch, the effects are much more direct. Even with a smaller amplifier they seemed to be able to move the whole couch much more noticeably. This was a much more tactile experience and immediately put a huge grin on my face. However, there was not the same degree of control as shown with the ButtKicker, as the subtle, fast movements were less perceptible. I tried adjusting levels and crossover frequencies to counter

this to no avail. Then it occurred to me to try the ButtKicker's 1100-watt amplifier on the Crowson TES-100. I had to sacrifice the benefits the separate left and right inputs of the BMP-3S gave me, but stereo information is generally limited in most material below 100 Hz anyway. In fact, it was often difficult to feel any difference in left and right movement in my couch. According to Crowson, the effects are much more substantial when the system is installed on a single recliner, so you can feel the motion in the armrests. Because of this, Crowson recently teamed up with various furniture manufacturers to sell their TES-100M (mountable) actuators as factory-installed accessories.

"Holy Toledos Muchachas!" With this combination of ButtKicker amplifier and Crowson TES-100, everything came together. The control was fantastic, every little low frequency sound elicited a tiny movement, and every explosion shook my world. It felt like I was at one with the movie and the music. Subtle adjustment was possible for each cut to perfect the experience. The combined power of the amplifier and the absolute control of the Crowson actuator provided the perfect

mix. At last I could have my cake and eat it too! Just imagine what four of these things would do, one for each foot of the couch. Then add an amplifier for each foot, send front left bass to the front left exciter, rear left to the rear left, etc. It's not a D-BOX system, but it's certainly on its way. If you've got most everything else in your system right, these puppies will put the cream on the cake. Screw the diet, go treat yourself.

Now, the Totem Drum. I was never able to get really comfortable with this one. I mean, you had to sit on it. Perhaps I needed thicker cushions. So, I had my son sit on the Drum, and I sat next to him. It was fun for him, but actually a better experience for me. Because of its size, it is immediately noticeable when sitting on it, and if you put it under an unused seat in the couch, the energy is not direct enough to be of use. Placing the Drum under the couch is not very effective either, as most of the energy is then directed into the floor.

Of the three, the Totem Drum was the best at keeping the movement in the couch, and it is easy to see why this may be the deciding factor for some people. Both of the other

devices put a lot of energy into the structure of the room, with the floor actually vibrating. This kind of energy can "leak" into other rooms of the house, which could easily be a distraction for anyone not directly enjoying the experience. The Totem Drum is by far the best of the three at minimizing that "effect."

The amplifier, although only 100 watts, exerted great control over the movement, generating a very accurate experience. The Totem was definitely the most tactile of the three devices. The effect was very immersive and definitely added a great deal to the whole enjoyment of the movies and music I listened to. My son said it was the one he would choose when watching a movie with his girlfriend—high praise indeed.

## In Conclusion

All three of these devices are great fun and worth having. Whichever way you go, these things will definitely add that extra dimension to your home theatre experience. For my money, it would be four Crowson's, four amplifiers, and a couch big enough for the whole family. ■

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