



## Hsu Research VTF-3 Mk5 HP Subwoofer

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Hsu Research ups the ante considerably with the new and improved VTF-3 Mk5 HP subwoofer. This is the replacement for the VTF-3 Mk4, a subwoofer I admired greatly and made a part of my reference system. The Mk5 HP is different in just about every possible way. The Mk4 had a side-firing woofer and rear-firing ports. The Mk5 HP has a forward firing woofer and forward firing ports. The Mk4 had a 350-watt amplifier capable of short peaks of 900 watts. The Mk5 HP has a 600-watt amplifier capable of 2,000-watt peaks. The Mk4 had a 12-inch driver, while the Mk5 HP adopts the 15-inch driver from the VTF-15H subwoofers. And the dimensions of the cabinet are different, though, the two subwoofers probably have fairly similar volumes. Unfortunately, when you make that many changes to a \$699 subwoofer (Mk4), the price has to go up, but only to a very reasonable \$799. The next steps up the Hsu Research performance ladder are the VTF-15H at \$879, with a 350-watt amplifier, and the VTF-15H Mk2 at \$899, with the same 600-watt amplifier that's in the VTF-3 Mk5 HP. These VTF-15H subwoofers have the same 15-inch driver in a cabinet that's slightly wider and higher and 4.5 inches deeper than the VTF-3 Mk5 HP. Hsu claims an additional 2 Hz of bass extension, to 16 Hz, with at least one port open for the VTF-15H Mk2. Since I measure 16 Hz at the same SPL as 25 to 100 Hz with the VTF-3 Mk5 HP, perhaps the VTF-15H Mk2 would be good down to 14 Hz in this room. Interesting thought.

That's not the end of Hsu's product line, though. Hsu's flagship subwoofer is the \$1,299 ULS-15, with the same 15-inch driver and 600-watt amplifier in a smaller sealed box enclosure. The smaller enclosure size and lack of ports would normally

mean less deep-bass response, but Hsu has worked some sort of wizardry, and this subwoofer is rated down to 15 Hz, with in-room response in many cases going down to 10 Hz. But even beyond that, Hsu offers a "package" of two of the VTF-15H subwoofers they call DualDrive. Each of these subwoofers has the 350-watt amplifier, which is plenty when you are running a pair of subwoofers playing the same LFE signal because each subwoofer needs only a quarter of the amplifier power of a single subwoofer to produce the same sound-pressure level. Seven-hundred watts in two subwoofers is like 2,800 watts in a single subwoofer. Hsu warns in the description of this package deal that these two subwoofers can literally break windows and that care should be used. But if that isn't enough for you, Hsu also has a DualDrive package with two ULS-15 subwoofers. Of course, you can double up on any subwoofer model that fits your budget. Hsu also offers a mid-bass woofer that focuses on frequencies from 50 Hz and up. Hsu says this adds extra impact to home theatre systems that need help getting the right level of boom and bang.

If your room allows it, you can place two subwoofers equal distance from the main seat and opposite each other to produce a subwoofer phantom image directly at the listening position. For example, if you have a front subwoofer behind your projection screen that's 12 feet from the main seat, if you can place a second subwoofer 12 feet behind the main seat, you will have a phantom subwoofer right at the main seat, assuming both subwoofers are receiving the same signal and both are set to the same output level. Using unequal levels to compensate for unequal distances isn't as effective in reducing or eliminating room effects. A "true" equal-distance phantom subwoofer image can overcome most room issues, leaving you with very linear bass at the main seat. Another option Hsu often uses at stereo and home theatre shows and recommends for home use is placing the subwoofer very close to the main seat so the room is (mostly) taken out of the equation. This near-field placement option is an easy way to overcome room response issues if you can do it in your room. The close placement means the subwoofer needs less power for the same SPLs as a subwoofer placed 10 feet or more from the main seat. It can sometimes be tricky to set the level of a nearfield subwoofer accurately with a meter, so you have to measure and listen, then listen some more. If the bass seems too loud or not loud enough when the measurement is correct, you just have to go by what you hear and make the sub a little louder or softer to get the bass balance correct.

Hsu markets their subwoofers online only. There is a 30-day trial period where the subwoofer can be returned for full credit (minus shipping), provided it is in "as new" condition. But it seems inconceivable that anyone would return an Hsu subwoofer. Hsu offers an optional, extra-cost, real-wood veneer finish on some models. But for the time being, the VTF-3 Mk5 HP is available only with the standard satin black finish. The satin black finish is impeccably applied. Non-marring feet are pre-installed on the bottom of the sub. The grille cloth has an integral frame and is easy to install or remove as you wish.

Now we get to the heart of the matter. If you've been following *Widescreen Review* for a while, you already know I thought Hsu's VTF-3 Mk4 was a remarkable performer, making no apologies when compared to subwoofers costing up to \$3,000, in spite of its sub-\$700 price tag. I was able to achieve incredibly linear response from that subwoofer in two different rooms, including 16 Hz being just as loud as higher bass frequencies. That modestly priced subwoofer was seriously excellent at any price. With the replacement costing \$100 more, expectations are higher. The VTF-3 Mk5 HP is flabbergastingly good. The second song I played on it, "Storms In Africa Part 2" from Enya's *Watermark* album revealed textures in the deep bass notes I'd never heard before. That experience instantly raised my expectations of what great subwoofers sound like and revealed that the cost of the subwoofer often has little to do with the actual sound quality and deep bass extension you get. There are a remarkable number of subwoofers sold for multiples of the cost of the VTF-3

Mk5 HP that have little or no output below the 20- to 24-Hz range, and they don't have the room-shaking power you get from the Mk5 HP. The Mk5 HP keeps on going down to 16 Hz at least. I don't have test tones lower in frequency than 16 Hz, but 16 Hz is so effortless for the Mk5 HP that it seems very likely they could reproduce frequencies well below 16 Hz, at least in my room. I do have some room gain below 20 to 25 Hz, but I used EQ2 and Q=0.3 tuning options, both of which reduce deep bass output. Even with those two tuning options, the Mk5 HP still has full-power/volume bass at 16 Hz. These settings were recommended by Dr. Hsu when there turned out to be a frightening amount of bass below 20 Hz. They worked and convinced me that rooms without deep bass reinforcement would still be able to achieve very loud bass at 20 Hz and lower.

The opening bass event in *Edge Of Tomorrow* (*Live Die Repeat*), caused both the VTF-3 Mk4 and the XTZ SUB 1X12 (both having 12-inch drivers) to move so much air it felt like a fan was turned on for the 5 seconds or so of the deepest bass during that short sequence. The 15-inch driver (56 percent more radiating surface area compared to 12-inch drivers) and more powerful amplifier made it seem like the other two subwoofers were on the lowest fan speed, while the Mk5 HP was on the highest fan speed. The room vibrates with considerably more force, causing the bass experience to be considerably more visceral. But the Mk5 HP wasn't just for "big" bass events. I can't tell you how many music tracks I listened to that I thought had very little bass, only to be surprised by the Mk5 HP revealing a bass line I never realized was there before. Want to make high school girls' heads explode? Play Taylor Swift's "Welcome To New York" from the *1989* album at substantial volume. Or Lorde's "Royals." I had no idea pop music had found deep bass somewhere along the line. Bass as powerful as these two tracks used to be exceptionally rare. But now you find it on a fair bit of pop... Pitbull's "Timber," Robin Thicke's "Blurred Lines," and even Pharrell's "Happy" all have surprisingly deep bass, but it doesn't sound like much of anything over ear buds, Internet radio, or broadcast radio in the car. **The Mk5 HP showed me that there was a world of bass out there I hadn't experienced before, in spite of how good the Mk4 was. The performance of the Mk5 HP on subtle bass was at least as impressive as the performance during bigger bass moments. For movies and music alike, the subtleties the VTF-3 Mk5 HP reveals at just the right levels, from just barely audible to moderately audible, are perfectly integrated with the overall presentation.**

When it came to big bass moments, the Mk5 HP did something really impressive. It would reproduce these incredibly loud, sometimes tortured-sounding bass events without the slightest hint that it was working hard. It was like having Duane "The Rock" Johnson pass you a toothpick. Subwoofers like the Mk4 and XTZ SUB 1X12 don't sound like they are working hard until you hear the same things played with the Mk5 HP. **The ease in the way the Mk5 HP reproduces difficult and loud bass events is quite noticeable and impressive. Every last bit of bass detail remains clean and clear during major bass events, and there's no audible port noise, even during the powerful bass event at the beginning of *Edge Of Tomorrow*. Months after my first listen to the VTF-3 Mk5 HP, I am still pulling out movies to hear them again with a whole new perspective on bass quality—same thing with music. All genres and time periods sound different enough with the Mk5 HP sub that it makes me want to hear everything again just to see what I've been missing.**

## Conclusion

**There was no question on hearing the VTF-3 Mk5 HP that it was not going to leave my theatre room. The Mk5 HP is so good that it can't be ignored as a tool for raising the entertainment bar as well as being a superior benchmark for other subwoofer reviews. There may be better subwoofers out there, but they are going to be considerably**

## SPECIFICATIONS

### Hsu Research VTF-3 Mk5 HP Subwoofer

#### Features

Single custom-manufactured 15" driver, die-cast frame, multiple shoring rings, fiberglass reinforced cone, forward firing  
Dual forward ports can be configured with 2 open ports, 2 closed ports, or 1 open and 1 closed port  
1 port is 4-inch diameter, the other port is 3-inch diameter  
600-watt amplifier with 2,000-watt short-term peak power  
Variable Q control 0.3 to 0.7 allows bass response tailoring  
Variable crossover: 30-90 Hz w/ 24 dB per octave slope plus bypass mode  
Phase: 0 or 180 (degrees)  
LFE input (RCA), stereo line level inputs (RCA); stereo loudspeaker level inputs (binding posts)  
BASH amplifier uses class AB output stage for high fidelity, low distortion, and high output  
EQ1 response option provides linear deep low bass performance; EQ2 rolls off bass gently to compensate for rooms with low-frequency gain  
Satin black painted finish with removable grille cloth  
Detachable AC power cord with IEC connector  
Auto ON, Always ON, or OFF power options

#### Specifications

Dimensions (WHD In Inches): 17.25 x 24 x 21.5  
Weight (In Pounds): 85  
Amplifier power: 600 RMS continuous; 2,000 peak (watts)  
Power Requirement: 120 or 240 (volts)  
Power consumption: 720 maximum; typical operating 30-230 (watts)  
Frequency response Ports Open: 18-200+ Hz +/-2 dB  
Frequency response Ports Closed: 22-200+ Hz +/- 2 dB  
Designed in: USA  
Assembled in: China  
Warranty: amplifier/electronics 2 years; rest of sub 7 years  
Suggested retail price: \$799

#### Manufactured By:

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more expensive (think 5 to 10 times the cost of the VTF-3 Mk5 HP, aside from Hsu's own VTF-15H subwoofers and ULS-15 subwoofers), as well as being physically larger and potentially too heavy for a single person to move into position. I have to believe that there aren't many home theatres that need more subwoofer than the VTF-3 Mk5 HP. If you do need more sub than one of these can deliver, you can always add a second sub and/or move up to the VTF-15H, -15H Mk2, or ULS-15, and double up on one of those. **The biggest strengths of the VTF-3 Mk5 HP are: someone with a relatively modest budget can possess a subwoofer so good that it's literally reference quality; and someone with a more liberal subwoofer budget can get reference-quality bass for much less, allowing a bigger budget for more movies or a better projector to enjoy with the new subwoofer.** **WSR**

