

JBL Ti SERIES LOUDSPEAKERS

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According to a recent *Billboard* survey, roughly 70% of the nation's recording studios use JBL speakers. Many audiophiles will regard this as a mixed blessing. JBL has long been famous for the dynamic range of its speakers and the quality of its individual drivers, but not for flat frequency response, tightly controlled bass or the smooth pulse and phase response of top-quality audiophile speakers. In fact, JBL has had a reputation for making speakers best for rock music, with more punch than accuracy.

This reputation, however, has always been a bit unfair. True, most JBL speakers have not made many audiophiles fall in love with them or with the thought of records being produced using such speakers as a reference standard. Nevertheless, JBL has always made some speakers, such as the initial version of the 250, that set a high standard for accuracy. What the company did *not* do was keep up with the best high-end competition in imaging, depth, and midrange transparency. Speakers from Fuselier, Quad, Thiel, Snell and Vandersteen offered smoother response, more control, more detail and "air" than even the best JBL speakers, and a more realistic sound stage. Brands like Infinity and VMPS offered a superior combination of excellent dynamic response and overall accuracy.

Well, JBL has made a major comeback! Its new Ti series ranks with the best cone speakers available in their respective price ranges, and the larger speakers in the series have enough bass control, smooth frequency response and musical detail to soothe the heart of even the most jaundiced audio critic.

The improvements embodied in the Ti series are partly the result of a new, high-frequency driver using a low-mass, ribbed titanium dome. I've compared JBL speakers using this driver to



JBL 250Ti loudspeakers

the Quad ESL 63 and to the Magnepan MG-III's; their upper-octave performance rivals the best ribbons, and outperforms any electrostatic tweeter or full-range panel I have yet heard.

I feel the main improvement in the Ti series, however, is the result of better crossovers and midrange drivers. Glamorous as dome tweeters of exotic metals may be, I suspect that most audiophiles will be more impressed with the smooth, polypropylene-filled midranges used in most of the new Ti series, and with JBL's ability to develop crossovers that make the midrange work in proper combination with the new titanium tweeter and JBL's fiber and Aquaplas-laminate woofer. The Ti series has (literally) some shiny new technology, but its real strong points are a return to fundamentals and a new emphasis on musical accuracy.

The 250Ti

JBL has four speakers in its new Ti series, ranging from a small, two-way speaker to large, four-way systems. The "flagship" is the 250Ti, a floor-standing system which lists for \$3,000 per pair. It is superbly styled, with an excellent wood finish and smooth lines that disguise its large size: It stands 52 inches high and weighs 150 pounds. The 250Ti has the new titanium dome tweeter; a 5-inch, filled polypropylene, midrange cone driver (used in all but the smallest of the Ti series); an 8-inch, Aquaplas-laminate, lower midrange cone driver, and a 14-inch, Aquaplas-laminate woofer.

The 250Ti's crossover frequencies are at 400 Hz, 1.4 kHz, and 5.2 kHz. The networks are fairly complex, but the main crossover capacitors are bypassed with high-quality polypropyl-

The four-driver 250Ti has an open sound normally apparent only on planar or dipole speakers.

ene or polystyrene capacitors, use noninductive resistors, and employ air-core inductors in all but the bass section—where the iron-core inductor can take up to 10 amperes before saturating. The 250Ti is relatively efficient, has a smooth impedance curve with an average of 7 ohms, and can take up to 400 watts.

The rear panel has high-quality, gold-plated binding posts that allow the use of top-quality speaker cables. More importantly, the 250Ti has heavy, screw-on shunts that allow the user to alter the relative level of each high-frequency and midrange driver by several decibels. While the number of possible adjustments is limited, they proved to be well chosen by JBL's designers for home use.

To shift to matters of real importance, the sound lives up to the speaker's size and technology. The height of the tweeter and upper-midrange driver frees the 250Ti from many normal floor and furniture effects, combining with the broad, radiating axis of all four drivers to give the 250Ti an open sound and "air" normally apparent only on planar or dipole speakers.

The listening area is wide and stable. In spite of the various arguments for narrow-angle or omnidirectional speakers, the near-hemispheric radiation of the 250Ti provided an almost ideal sound stage in my room, surpassing that of the Quad ESL 63s in many respects. It proved far more realistic than speakers with narrow-angle tweeters like those in the KEF 105.2. The 250Ti's imaging is also remarkably stable and coherent considering the number of drivers it has, and rivals or surpasses that of many small speakers. The height of the tweeter and the crossover alignment do slightly elevate the sound stage, but this impression is more natural to me than that of looking down at a performance or straight at it. Depth is also unusually good, and there is no tendency to expand or collapse the sound stage in ways which are not natural to the music.

The adjustability of the midrange and high-frequency driver levels allows the 250Ti to be tailored to a given room or high-fidelity system to an exceptional degree, but makes it difficult to talk about frequency response and coherence. The "flat" settings of the

treble and midrange drivers, for example, produce a sound close to that of the Thiel CS3, while a -2.5 dB tweeter setting and -1 dB upper-midrange setting bring the 250Ti close to the balance of the Quad ESL 63.

I know that many purists object to any adjustment in speakers, but I welcomed the ability to alter the 250Ti's performance to get the most natural balance and timbre, and to alter the apparent listening position to suit my taste. Few speakers provide a similar opportunity to get smooth, extended response, and I suspect that those who cannot rebuild their listening rooms to suit a given loudspeaker may feel the same way. At the same time, the 250Ti's adjustment range is sufficiently limited that it is hard to make it sound unnatural, and easy to return precisely to a previous setting.

The speaker's power-handling capabilities are superb. Its only rivals I know of, at anything approaching the same price, are the VMPS Super Towers and the Infinity RS IB and RS IIB. This is not simply a matter of being able to play loud; it also means that the 250Ti can provide excellent detail during very soft passages and that it does not change in sonic character as loudness increases. Few speakers at any price provide similar dynamic coherence or a similar ability to "cut loose" to full, mass-orchestral levels without strain and with a single amplifier.

Electrostatic- and ribbon-speaker aficionados will find the 250Ti to have all the upper-octave speed and detail they desire—although I would rank the best ribbon tweeters as having slightly better speed and definition in the top of the midrange and in the lower treble. The 250Ti does not smear the finer details in even the best direct-to-disc recordings. If your record, cartridge and electronics can give you the necessary resolution, the JBL 250Ti will let you hear it. This is true even at moderate to high levels in the area between 50 Hz and 1 kHz, where many competing cone and dipole speakers tend to lose some detail.

The bass is solidly controlled and is very definitely within the high-end tradition. It does not have subwoofer power, but it extended to a room-rattling 37 Hz in my listening room at power levels well above those I'd nor-

mally dream of using for organ or full orchestra recordings. Low bass was also relatively directional, and small changes in frequency were unusually clear. This is a sign of truly excellent bass control and linearity. Once again, only a few speakers at any price—such as the Wilson Audio Modular Monitors; Entec, RH Labs, and Janis subwoofers; larger VMPS speakers, and Infinity IRS and RS-IBs—have a similar ability to show that bass can provide the listener with important sound-stage information.

In short, the JBL 250Ti offers an outstanding combination of virtues, remarkably refreshing in a world where so many speakers force the buyer to choose between a good sound stage, high power levels and a clean midrange. The 250Ti is not only "digital ready," it is good enough to be analog-ready. You can take any musical performance I know of, play it through this speaker at a natural level, and get a musically natural result.

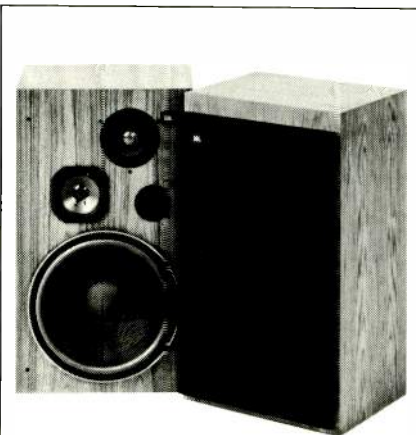
This, incidentally, means you should use top-quality speaker cables and electronics. You don't really need more than 70 watts, but you do need a lot of transparency and control. The 250Ti clearly does benefit from the added control which high-power tube amplifiers provide, and from the high damping factor and power reserves of transistor amplifiers. This is not a speaker to be used with low-cost receivers or amplifiers that can't really control a large woofer. You will hear the amplifier's loss of control long before it clips, and lose most of the musical pleasure that true, deep bass can give on those few recordings where it is musically natural.

At the same time, I should note that the 250Ti does not have quite the upper-bass to upper-midrange smoothness and coherence of such top-ranking competitors as the Fuselier Model 5, Thiel CS3, Vandersteen 4, Quad ESL 63, or Infinity RS-IB. Good as the 250Ti is in this respect, these competing speakers have a more seamless quality in the upper midrange, until you reach relatively high power levels. This may indicate that JBL may be able to do still better in the future. At the same time, the 250Ti's weakness in this regard is sufficiently small at longer listening distances, and after proper at-

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JBL 18Ti



JBL 120Ti



JBL 240Ti

tention to speaker placement and driver level, so that I suspect even the most demanding audiophile will find it hard to choose between midrange coherence and the 250Ti's combination of overall accuracy and dynamic range. This may well be the perfect speaker for the fan of full orchestral music, grand opera, high-level rock, and pipe organ. It certainly is an order of magnitude better than the speakers most studios use to make their records, whether they are earlier JBL speakers or some other brand.

The 18Ti

The JBL 18Ti, a small monitor, uses the same titanium tweeter as the 250Ti but has only a single, 6½-inch, filled polypropylene woofer/midrange driver. It sells for \$500 per pair; each speaker measures 15 × 9 × 8 inches and weighs about 17 pounds.

The JBL 18Ti does not have level adjustments, but, like all small speakers, its sound character can be varied significantly by altering its distance from the rear wall, its height, and its tilt. Although there is no consensus as to exactly how the treble should coincide with the bass, the effect is far more noticeable in a given listening position on small monitors than on larger speakers.

I found the 18Ti sounded best on stands, without any tilt, about 12 inches from the rear wall. This kept the sound away from any furniture and side walls and kept the midrange driver just below the height of my ear when I was seated. Placement is so room-specific, however, that I strongly recommend you experiment.

Under these conditions, the 18Ti's sound balance is remarkably smooth from about 150 Hz up. It is similar to every small, two-way monitor in its lack of bass power and extension, but the extended range of the titanium tweeter does not burn into the ear or appear imbalanced. The 18Ti has an unusually well-chosen level and crossover. If anything, strings and female voice are a bit distant without being veiled.

The midrange lacks the life and dynamics of the other models in the Ti series, and is not as detailed and transparent as the best competition, such as the Spica TC-50 and Dayton Wright LCM-1. It is, however, better

balanced—in terms of timbre, high-frequency energy, and bass—than the Spicas without their new and quite excellent subwoofers. The 18Ti does not have the bass extension of the Dayton Wright LCM-1, but it has slightly cleaner top-octave sound—if you allow for a slight roll in level. The 18Ti lacks the lower-midrange/upper-bass warmth of the LS-3/5A, but it has far better dynamic range and a much flatter and more open upper-octave sound.

In short, the 18Ti proves JBL can compete at the bottom of the high end as well as at the top.

The 120Ti and 240Ti

This brings me to the 120Ti, at \$1,100 per pair, and the 240Ti, at \$1,500 per pair. The strengths in the new JBL Ti series stand out far more clearly as you go up from the 18Ti to the other three speakers in the series. If you can afford it, I'd strongly suggest you go for at least the 120Ti. (The 240Ti, while a natural step up from the 120Ti, is not as dramatic an improvement as the 120Ti is over the 18Ti, or the 250Ti over the others.) A good three- or four-way system can offer more midrange purity, air and transparency than a two-way system. Even the more refined forms of music—chamber music, small instrumental groups, and even solo voice—benefit from every bit of detail and transient speed you can get.

The 120Ti offers this added sound quality in a speaker which, again, has exceptional power and dynamic range, and it uses the same midrange speaker and titanium tweeter used in the 240Ti and 250Ti. Unlike the 18Ti, you do not just hear the music, you participate in it.

I admit that the 120Ti and 240Ti aren't cheap. I also have to say that there is a lot of tough competition in cone speakers from lesser known high-end manufacturers in the same general price range. I think, however, that JBL can stand the heat and that this company merits a place on the "short list" of anyone who can afford to put \$900 to \$1,600 into a pair of speakers, and who cares enough to really listen. JBL has always had the power, the bass, and the dynamics; it now has all the rest as well.

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