

# REVUE DU SON

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FRANCE

## On the test bench: Loudspeakers



MANUFACTURER SPECIFICATIONS: 2-way speaker with passive radiator; 6.5-inch woofer; 6.5-inch passive radiator; 1-inch dome tweeter; Sensitivity/86 dB/1m/1W; Impedance/4 ohms; Maximum power/150 W; Dimensions/8.5w x 11d x 33h; Weight/42 pounds; Origin/United States; Distributor/Audio Focus, Paris, France

## THIEL CS1.5

**This American company, founded by Jim Thiel in 1976, manufactures speakers based on four types of fidelity: tonal, spatial, transient, and dynamic fidelity. Here's the CS1.5.**

This year, the American company Thiel celebrates its 20th year devoted to perfecting a line of speakers based on the philosophy of achieving sonic fidelity in four areas: tonal quality, spatial fidelity, transient response and dynamic fidelity.

- The tonal quality is determined largely by building drivers with well-balanced frequency response and from corrections done in the crossover network.

- Spatial fidelity is very important in high fidelity because it creates the sense of space between the speakers and gives the listening area a real three-dimensional feel. Instruments and soundstage are perfectly coherent and identifiable in space. In order to achieve this, Thiel created, as early as 1977, speaker systems with accurate phase response and cabinets without diffraction effects.

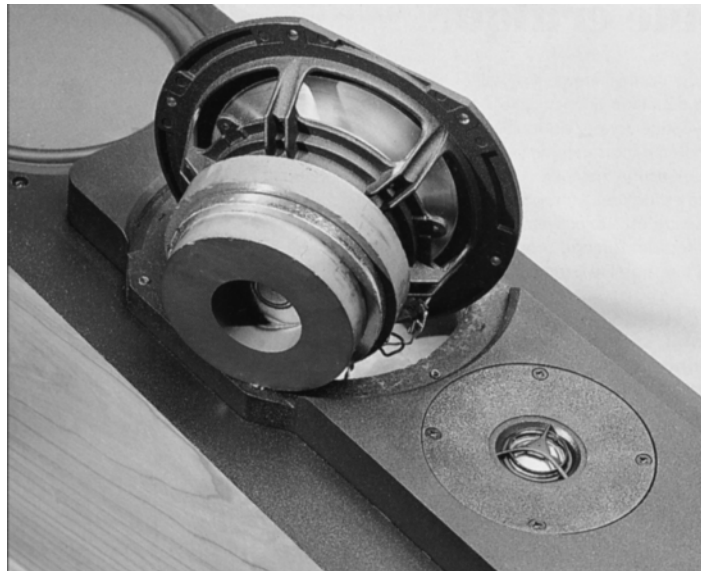
- The fidelity of transient response contributes largely to the realism in sound reproduction. It pertains to a note or sound's attack and decay. With regards to loudspeakers, it takes into account a wide array of parameters, from the transient response appropriate for each driver to resonances from the driver diaphragms and the unwanted vibrations in the speaker cabinet. In the case of the CS1.5 described here, the drivers and cabinets are engineered and manufactured with these parameters in mind by Thiel themselves.

- Dynamic fidelity relies heavily on the performance achieved in the three areas of fidelity previously mentioned. It relates to not only the dynamic performance appropriate for each driver but also to all the other components used to build the speaker.

**THE CS1.5** ranks third in cost in the Thiel line which includes a basic model SCS2 (2-way coaxial system), then CS.5

(2-way with domed tweeter). The CS1.5 tested here is followed by the CS2.2 (3-way with passive radiator), CS3.6, CS6, CS7 and, at the top of the line, the CS5i. The CS1.5 is the fifth generation of Thiel's "Coherent Source" technology used for a two-way speaker. It was developed to satisfy three objectives: built in a small cabinet, achieve true full-range performance, and sell at a realistic price. With a width of 8.5 inches and a depth of 11 inches, the cabinet size is minimal. Thanks to the rounded, angled baffle used on all models with the CS reference, the CS1.5 offers two advantages: the time accuracy of the speakers with regards to a seated listener and the elimination of diffracted sound waves caused by the edges of the speaker cabinet. This formula also enables the output from the low and high frequency drivers to arrive at the listener at the same time from a column-type speaker of moderate height, being only 33 inches tall. On this model, the addition of a passive radiator extends the low frequency response to 42 Hz.

**THE SPEAKER CABINET** is engineered with an attention to the smallest details. The cabinet walls are made of very thick MDF board, 2 inches for the front panel and 1-inch for the other walls. On the front, which is the angled portion, the baffle is shaped to house and time align the two drivers. A removable front grill is built on a frame with a curved contour and rounded edges to avoid diffrac-



*The short voice coil moving within a long coil drives the aluminum diaphragm of the low frequency driver. The motor system has a copper sleeve to stabilize the magnetic field.*

tion usually generated by the edges of grille frames and speaker cabinets.

The interior of the sealed cabinet is reinforced by three braces, which strengthen the cabinet

and help eliminate the problem of standing waves inside the cabinet. Medium density fiberglass is used for the acoustical dampening. Cabinets are also available in several different finishes (the American company's catalog shows 14 different finishes) which enhance the already detailed craftsmanship. The CS1.5 is, in spite of its small size, rather heavy, weighing 42 pounds.

a kapton support moving along a long pole drives the aluminum diaphragm. Its magnesium chassis supports a magnetic system that uses a double ferrite magnet (doubled for magnetic shielding) and a copper sleeve for a stable magnetic field. The tweeter uses a 1-inch aluminum dome. A phasing piece built

on the faceplate faces the dome regulates the response at high frequencies. The 6.5-inch passive is made up of a flat, synthetic foam diaphragm, 1-inch thick.

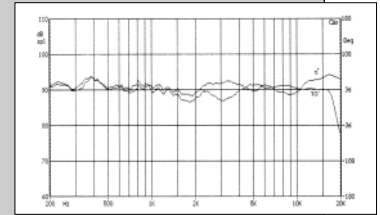
**THE CROSSOVER NETWORK** is very complex, made with five air-core coils, seven resistors and eight capacitors. It's a first order type of network optimized for coherent phase response as is indicated by the excellent step response measurements published by Thiel.

## Metal driver diaphragms contribute to the CS1.5's great coherence

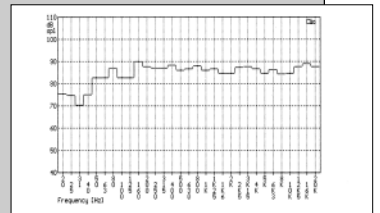
**THE LOW FREQUENCY DRIVER** is a very sophisticated 6.5-inch unit. A short height voice coil wound around

and help eliminate the problem of standing waves inside the cabinet. Medium density fiberglass is used for the acoustical dampening. Cabinets are also available in several different finishes (the American company's catalog shows 14 different finishes) which enhance the already detailed craftsmanship. The CS1.5 is, in spite of its small size, rather heavy, weighing 42 pounds.

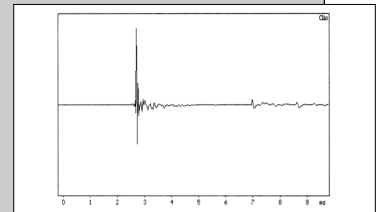
## Measurements



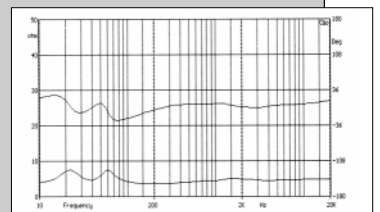
*Frequency response measured at 1m and at 30° off-axis for the Thiel CS1.5.*



*Frequency response at one third of an octave, in a semi-reverberant room for Thiel CS1.5.*



*Impulse response for the Thiel CS1.5.*



*Impedance and phase with regards to the frequency for the Thiel CS1.5.*

Great frequency response balance. The slight increase above 10 kHz is intentional, because one hears, at a horizontal angle between 15 and 30°, a perfectly flat response up to about 16 kHz. The measurement at a third of an octave with pink noise in a semi-reverberant room shows a very even response which extends down to 45 Hz without any loss of bass. The impulse response is excellent. It demonstrates the excellent phase response of the speakers for the listening positioning and at crossover point.

**Jean Hiraga**



# Sonic Evaluation

## TEST No. 1

**Paquito D’Rivera  
Portraits of Cuba  
Track 11 “Echale Salsita”  
Chesky JD145**

**J.H.** Caution: the manufacturer clearly states that the grilles must be in place while listening even though they are removable. The subjective tonal linearity is truly amazing. The absence of coloration is amazing, as well. The speaker gives a degree of sonic coherence which is rare.

**R.L.** It’s obvious that we’re dealing with a great listening experience. The sound is extremely coherent. The mix of voices is seamless; there’s no break-up in the entire spectrum of the product. The dynamics are a little bit narrow.

## TEST No. 2

**New Years Concert, Orch.  
Phil. De Vienne,  
Track 7, “Neue Pizzicato-  
Polka” Sony SK 48376**

**J.H.** Gives a sense of rare elegance: the background sounds are detailed, velvety and very soft. Lets you discover even the faintest sounds coming from the audience. Finger plucks are sharp but with a velvety sound.

**R.L.** No information is hidden. The smallest details of sound are captured and come out with a rare precision—but not because some “bump” falsely accentuates that area of the spectrum. Listening is balanced and neutral.

## TEST No. 3

**Mark Curry  
It’s Only Time,  
Track 1, “All Over Me”  
Virgin CDVUS 49**

**J.H.** Although the content of this

piece is totally different from the previous recording, one notices the common strengths that are the result of the unique sound characteristics of Thiel speakers. Extremely refined, amazing sound coherence. It’s all wrapped up in a type of velvety experience.

**R.L.** The Thiel speaker is a perfect mix between definition and softness. The sound is extremely detailed, but one doesn’t get fatigued because this precision is natural. The transient response is very fast. The sound image is extremely stable.

## TEST No. 4

**Vivaldi, Four Seasons  
Violin and Cello,  
Track 2, “Allegro”  
Accent/Musidisc 241-842**

**J.H.** The outstanding performance of the artists, the sense of pace, the vibratos full of rhythm and poetry create an ideal sound platform to highlight the capabilities of the Thiel speakers. A very good amplifier is necessary.

**R.L.** The soundstage depth is precise behind the speakers. The sound is balanced regardless of volume levels. One would hope for a wider dynamic range.

## TEST No. 5

**Christian McBride  
“Gettin’ To It”  
Track 5, “Splanky”**

## Verve 523 989-2

**J.H.** These little CS1.5 speakers continue to amaze us. The image size projected compared to the cabinet size is truly amazing. The degree of articulation reaches the maximum and the sound quality is sublime. However, just a bit of the dynamics are missing.

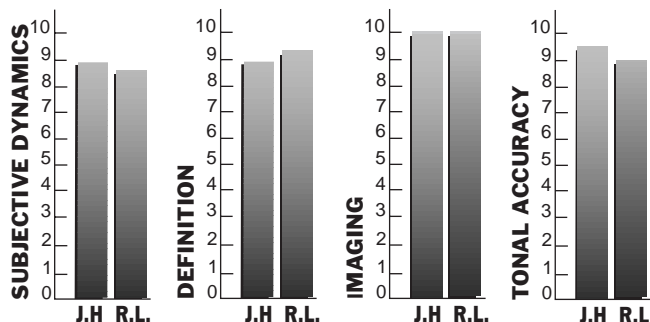
**R.L.** Agree completely with J.H. The soundstage size far exceeds the size of the speaker’s front panel and features a deep layering rarely found in any speakers. The passive radiator is sometimes lazy. Choose the amplifier carefully.

## TEST No. 6

**Best of Chesky, Vol. 2,  
Track 11, “Ana Caram/  
Solidao”, Chesky JD68**

**J.H.** Worrisome, or almost so, only because one wonders, from the extreme degree of realistic voice and guitar sound, what the more expensive Thiel models might offer? A little more dynamics and extreme low frequencies, of course.

**R.L.** The sound is very precise without getting too edgy. I feel there’s a bit of thickness missing in the voice of Anna Caram, though. Good low frequency weight which adds brilliance to it all.



## Overall Evaluation

• I would venture to say that the Thiel CS1.5 tested here is much like the other Thiel speaker models. The soft and velvety feeling surprises the listener. A longer listening session of a varied sonic and musical programming will help one to discover the surprising capabilities of the CS1.5 with regards to coherence and transparency. The term “coherence” is truly prominent here. With regards to its very small size, the low and very low frequencies are well reproduced, always taking into account quality and cleanliness. Of course, an appropriate amplifier is necessary. Carefully choose the cables and source components. A must listen.

—Jean Hiraga

• The return of Thiel to France is good news. This brand enjoys an excellent reputation overseas and my several listening sessions during U.S. conventions have supported their well-deserved acclaim. A few precautions before taking advantage of the sound of the Thiel CS1.5. They must be matched with appropriate electronics, meaning powerful and refined amplifiers. In addition, placing the speaker in the room cannot be done quickly. Listening to these “little” Thiels impressed us. Of course, there are Thiel models with more dynamics, better with lower frequencies (I would be curious to listen to the larger models) but one doesn’t forget the precise and stable three-dimensional image and the excellent sound neutrality. High price, but worth it. It’s a must!

—Robert Lacrampe