

# Super Cave Rehearsal and Recording Studio

## Brief Acoustical data

Owner: Novi Effendi

Acoustical Consultant: YP Hadi Sumoro K

### General Information

Super Cave Studio is located in South Philadelphia and mostly used for recording and band rehearsal. The studio is managed and ran by Novi for non-commercial use (limited and private use only).



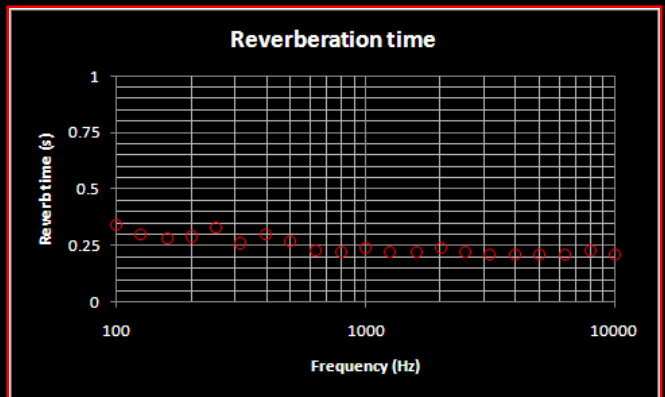
### Architectural and Structural Details

Walls: Concrete wall, drywall. Ceiling: Drywall, acoustical ceiling tile. Floor: Concrete. Area:  $\pm 241\text{ft}^2$ . Height:  $\pm 6.9\text{ft}$ .

### Acoustical Data

Reverberation time: 0.23s.

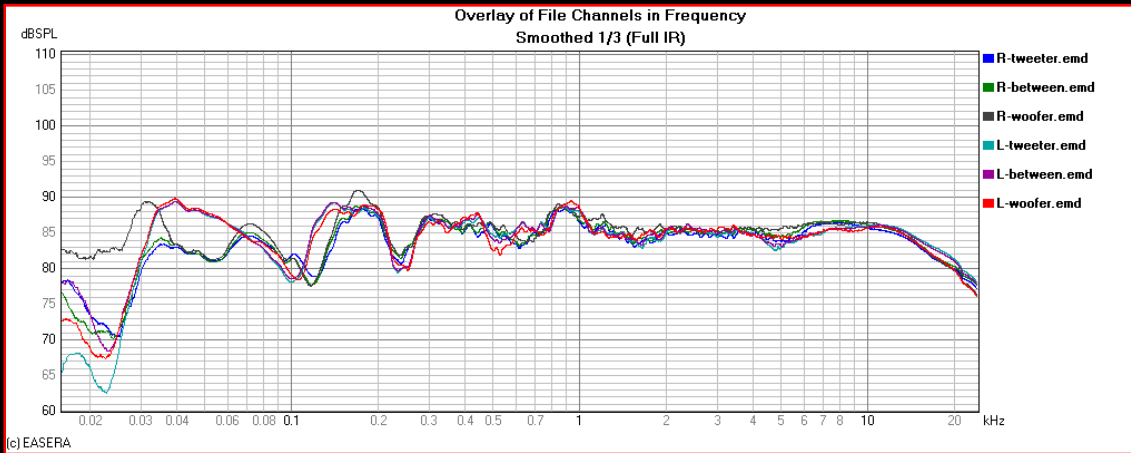
*Note: Additional measurements and information can be found on the next page.*



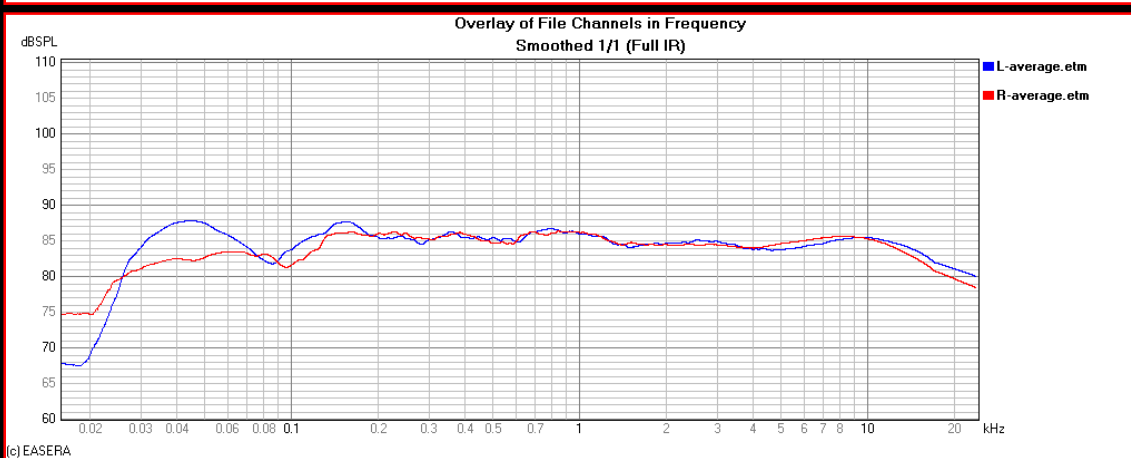
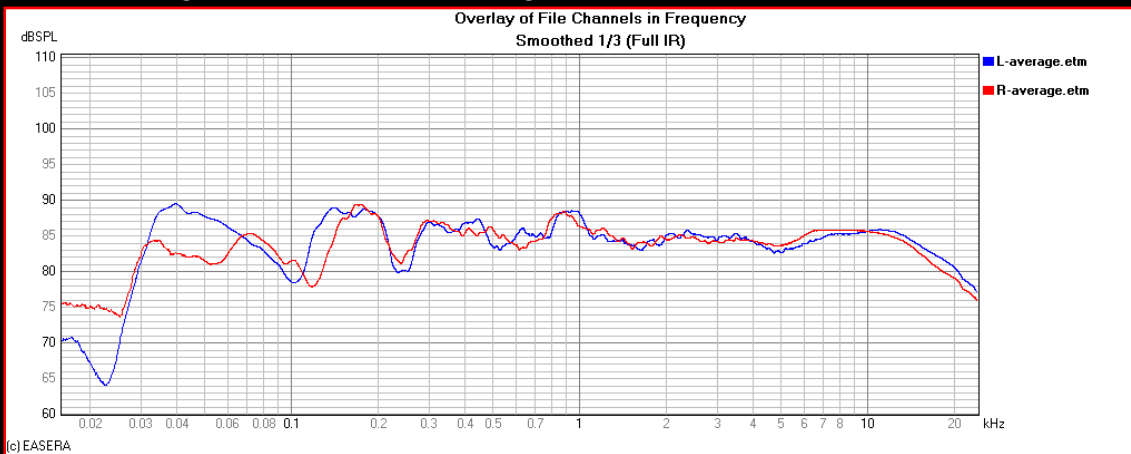
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All measurements were performed by placing the microphone in the sweetspot (ear height – seated position). EASERA, Tannoy Reveal6 (passive) loudspeakers powered by Samson Servo 200 and Earthworks M30BX (calibrated) were used to collect impulse responses. Three measurements were performed for each loudspeaker with slight changes on the microphone positions ( $\pm 4$  inches). All six frequency response measurements are shown below (1/3 octave smoothing).



Each left and right measurements are averaged and the result is shown below (1/3 and 1 octave smoothing).

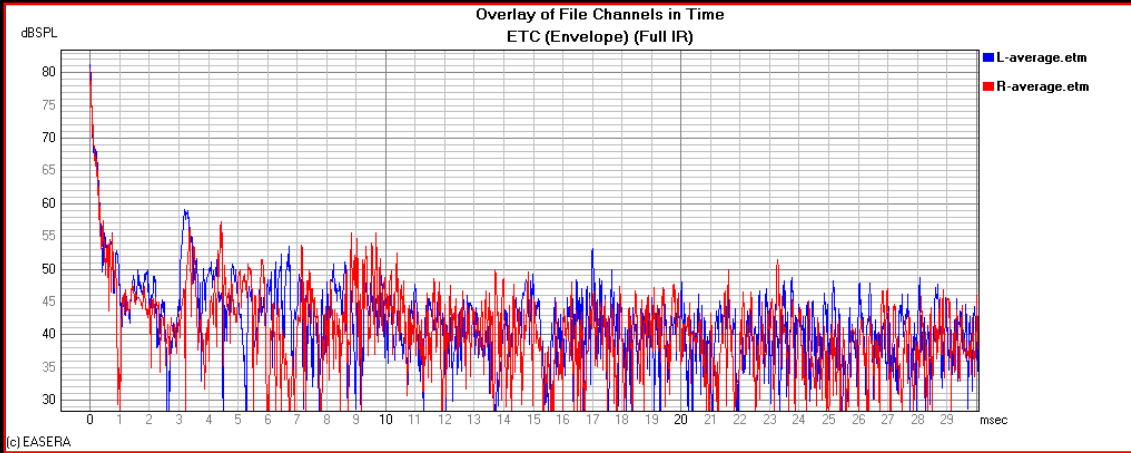


Tannoy Reveal6P operating range is 30Hz – 18000Hz (+3dB, -4dB) in this room (1 octave smoothing).

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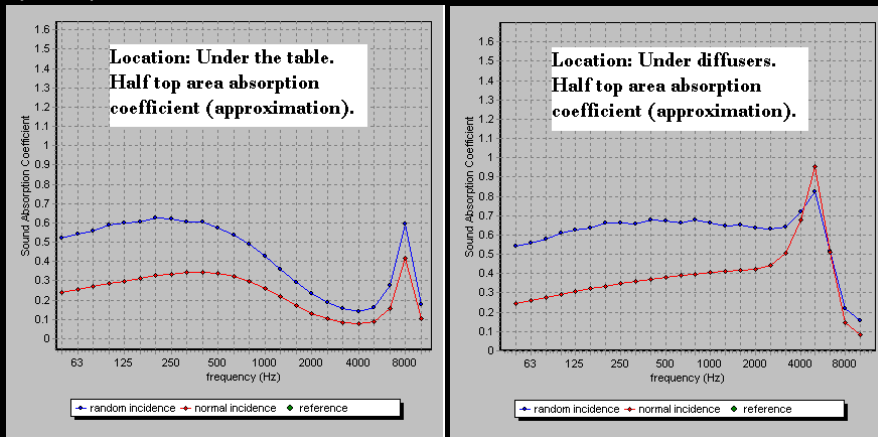
Energy-time curve (30ms window) is shown below.



Room condition during measurements are shown in the pictures below.



Two of four bass trap sound absorption coefficients are shown below (alpha numbers are approximation only, predicted by computer).



*Notes: There are four to eight different bass traps in the studio. Using four basic designs, various cavity depth and various fiberglass density, the bass traps are approximated to provide higher absorption coefficient values compared to the ones predicted by computer. This is confirmed subjectively by comparing floor tom sound reproduction before and after bass trap installation.*

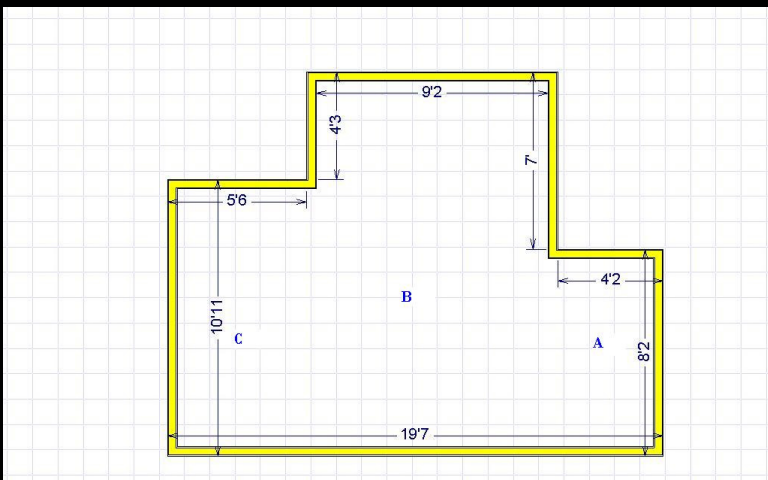
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Pictures during construction are shown below.



Sketch of the floor plan is shown below (dimensions are approximation only).



Three different zones are designed for recording flexibility in this studio:  
 Zone A – dead zone, very strong low frequency.  
 Zone B – ‘spacious’ zone, very ‘flat’ low frequency.  
 Zone C – live zone, strong low frequency.