

February 18th 2023

# SPLENDOR OMNIA

Re-Recording Studio

Theatrical Dolby Atmos Room Certified

“ACOUSTICS ISO REPORT”

February 18th 2023.



[www.3bh.mx](http://www.3bh.mx)

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**Acoustics ISO REPORT -****Tepoztlán, Mexico February 18th 2023.****Acoustic conditions obtained in the Re-recording Dolby Atmos studio  
“SPLENDOROMNIA”****(Isolation and Acoustic Treatment)**

Acoustics evaluation of the Multichannel Studio located in Tepoztlán.

- Insulation, measurement of background noise inside the room (NC Curve)
- Reverberation time with acoustic treatment finished.

**Acoustics Methodology**

The Acoustics Evaluation was performed with multiplexed microphones placed in the producer's position for frequency response analysis of the sound system per 1/3rd Octave, noise isolation in STC values and background noise in dBA/NC values through center bands per octave, all in accordance with Standard ISO 266, and by 30 seconds.

where values per band are summed to give the global reading under the weighting A/C, according to time to average it. The sensitivity and frequency response of each channel was also evaluated to comply the Standard SMPTE ST 202/ISO 2969. The documentation for the acoustics evaluation is reported according to the international Standard ISO 1996-2003.

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## Test Conditions

Until the aforementioned date, the room has been finished with the Acoustic Isolation and Acoustic treatment.

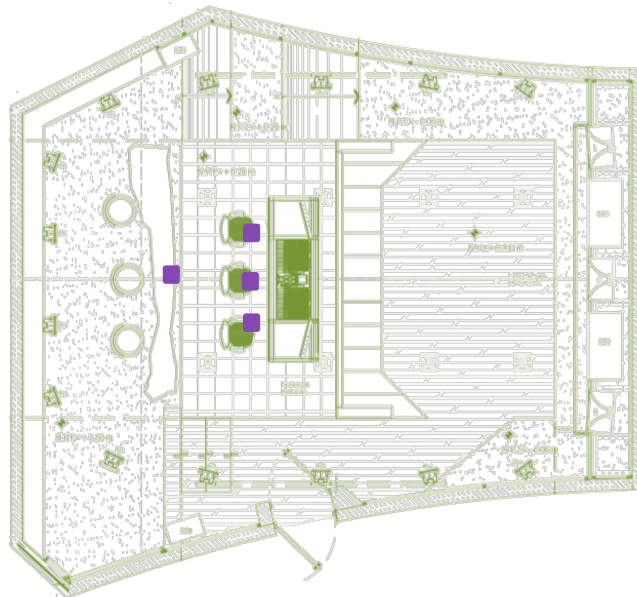
As acoustic instrumentation, the spectrum analyzer and reverberation time meter D2 – WinRTA was used with the criteria of the ISO6926 standard using the studio system as an electroacoustic element for amplifying the pink noise generated by the system.

## Atmospheric Conditions and Acoustic Instrumentation:

Acoustics measurements were performed under temperature and pressure conditions in Ocotitlán, Morelos (2,068m altitude, 19°00'13.73" N, 99°03'55.00"O, 1Pa = 94.12 dB @ 23°C with 31% of humidity) February 11th, 2023.

## Microphone Placement

The spatial evaluations (Splendor Omnia in Ocotitlán, Morelos), were carried out with the microphone position illustrated by the purple squares in the layout below, aiming the microphones at 90 degrees.

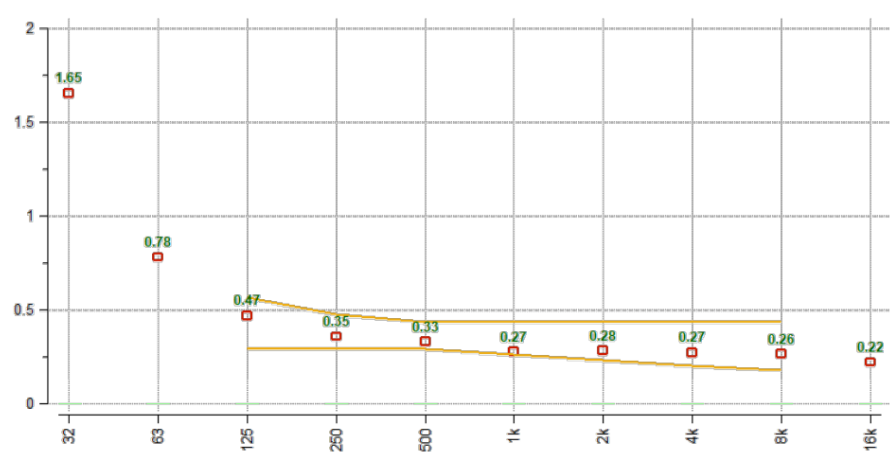


- Mic 1: Center seating position
- Mic 2: Left seating position
- Mic 3: Right seating position
- Mic 4: Back seating position

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**Results**

**TR60's Tonal Balance per Octave (s VS Hz)**



**Average RT60 Times for All Hits**

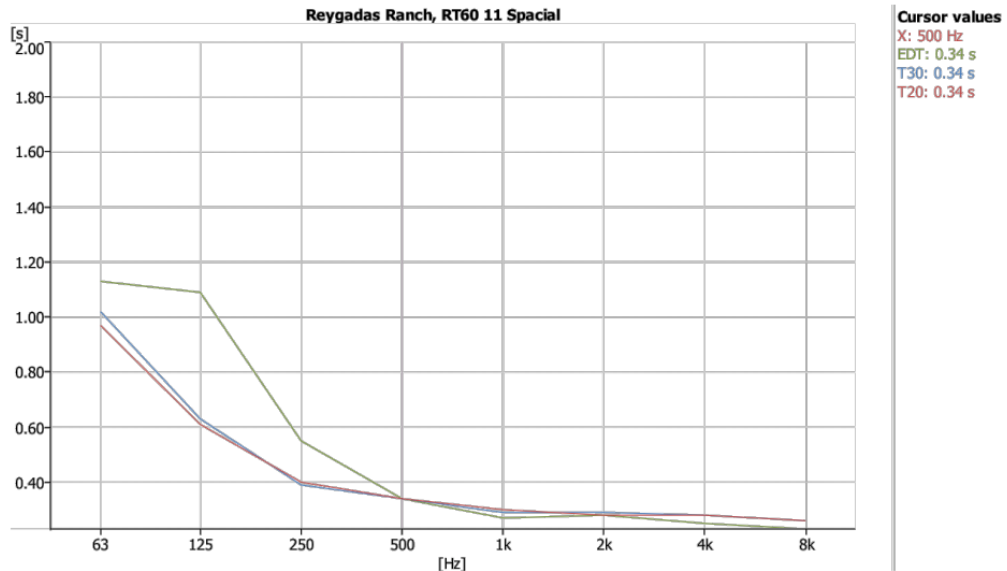
	<u>Mic1</u>	<u>Mic2</u>	<u>Mic3</u>	<u>Mic4</u>	<u>Avg</u>
32	2.09	2.34	2.11	1.91	2.11
63	1.25	1.35	1.20	1.06	1.22
125	0.64	0.64	0.57	0.66	0.63
250	0.39	0.41	0.45	0.41	0.41
500	0.35	0.34	0.36	0.35	0.35
1k	0.32	0.30	0.30	0.30	0.31
2k	0.29	0.30	0.29	0.29	0.30
4k	0.40	0.32	0.31	0.34	0.34
8k	0.28	0.27	0.27	0.28	0.27
16k	0.24	0.24	0.23	0.23	0.23



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**Reverberation and Decays Graphic:**

T20, T30, and Early Decay Times per octave



**Reverberation and Decays Chart:**

T20, T30, and Early Decay Times per octave

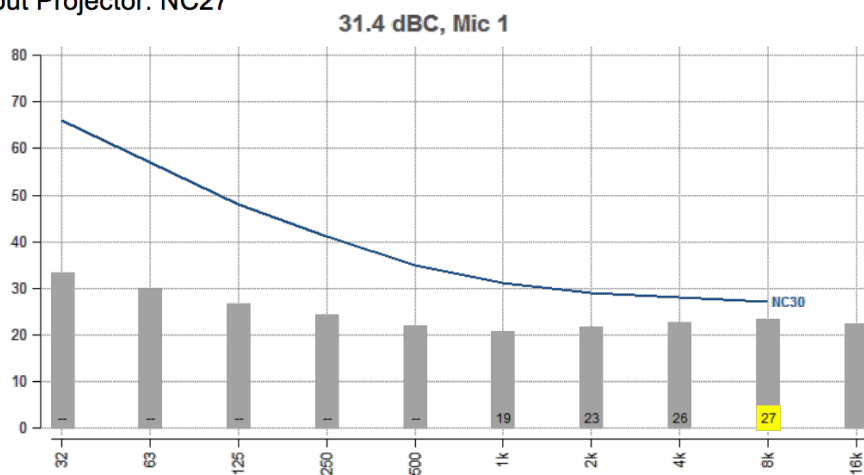
<i>FREQUENCY</i>	<i>T20</i>	<i>T30</i>	<i>EDT</i>
<b>63 Hz</b>	0.97	1.02	1
<b>125 Hz</b>	0.61	0.63	1
<b>250 Hz</b>	0.4	0.39	0.5
<b>500 Hz</b>	0.34	0.34	0.34
<b>1 kHz</b>	0.3	0.29	0.27
<b>2 kHz</b>	0.29	0.29	0.28
<b>4 kHz</b>	0.28	0.28	0.25
<b>8 kHz</b>	0.26	0.26	0.23

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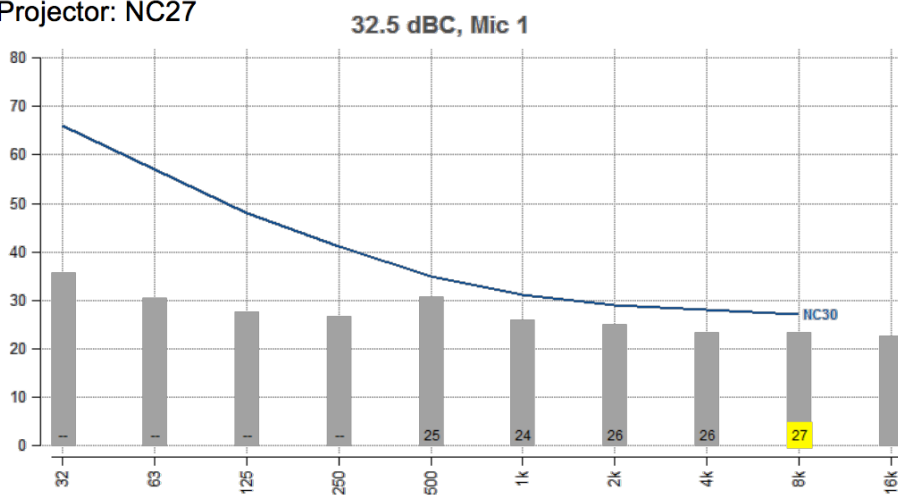
Acoustic insulation (Background noise measurements inside the room) – Re-recording.

Background noise measurement: D2

NC without Projector: NC27



NC with Projector: NC27

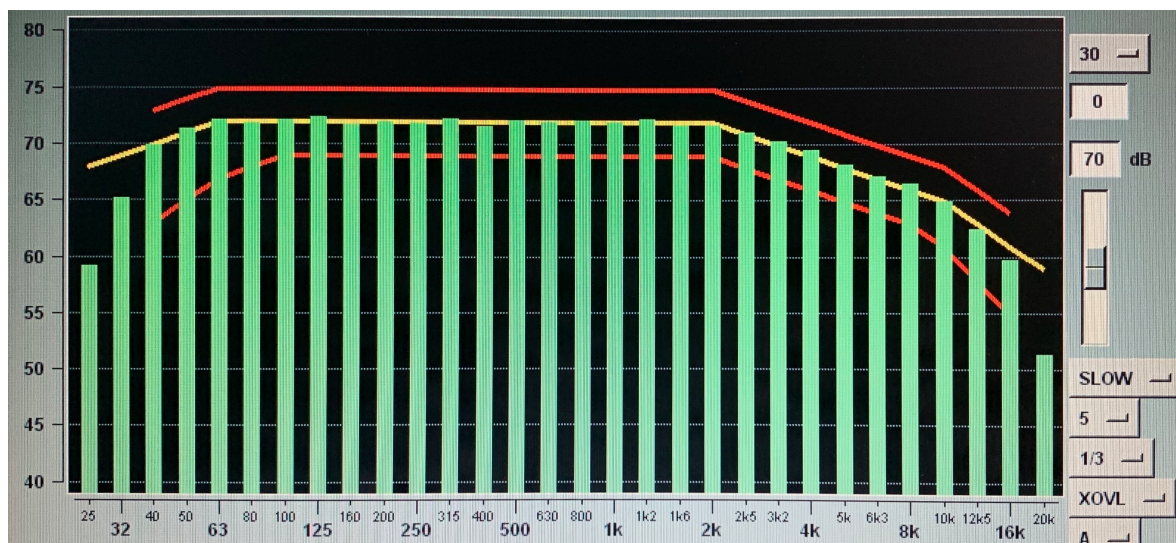


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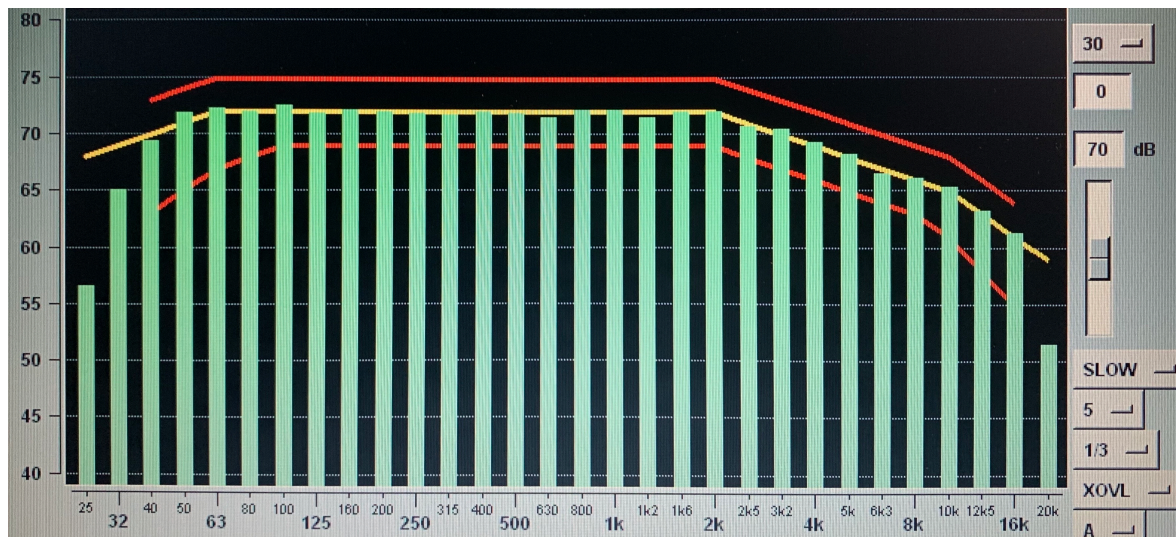
“X-Curve” calibration response @ - 20 dBFS, SMPTE ST202/ISO 2969:

System Atmos Theatrical 85SPL dBc

Left



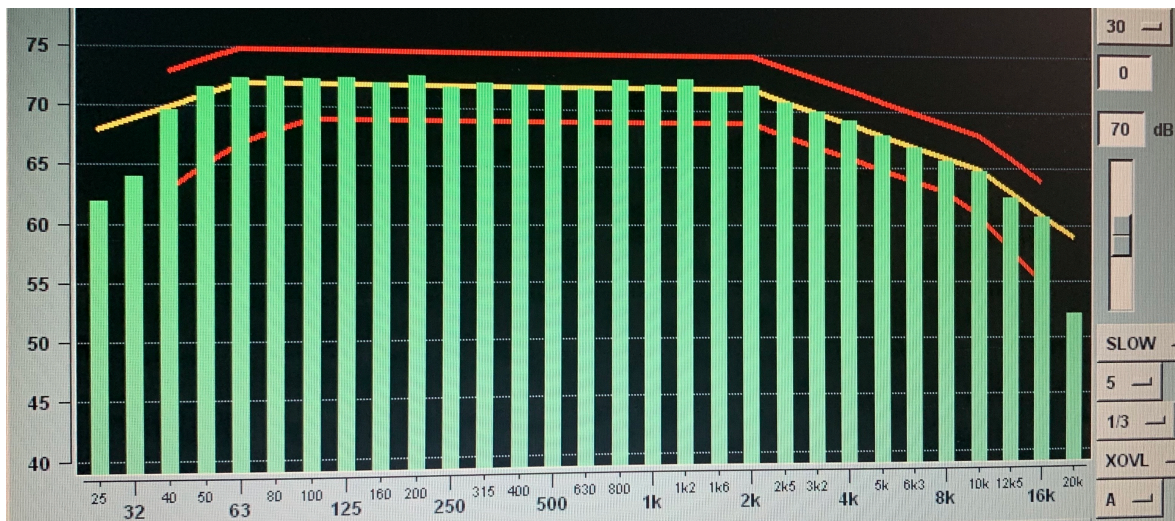
Center



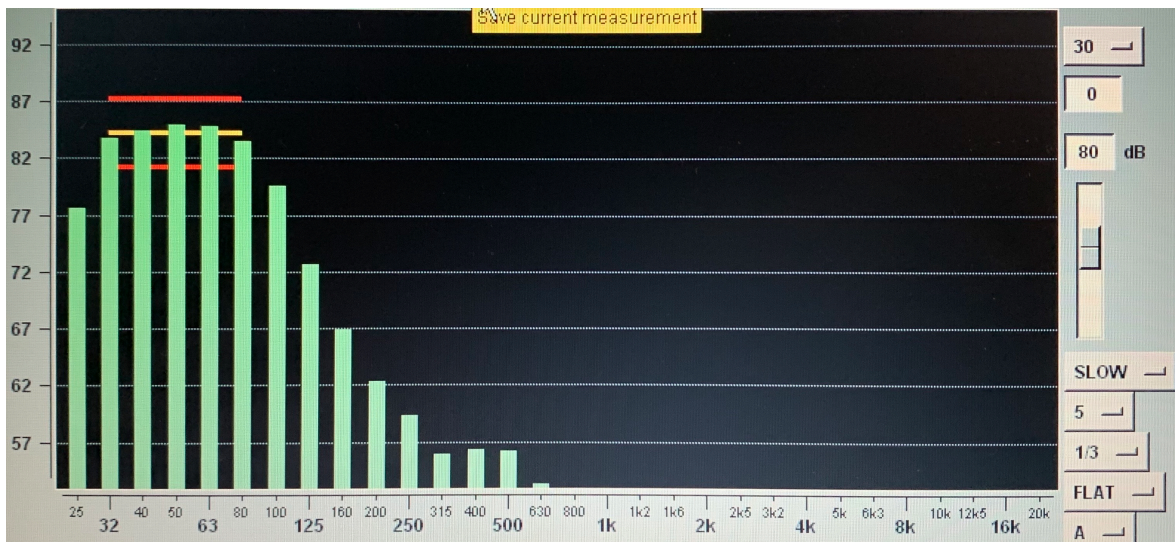


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Right

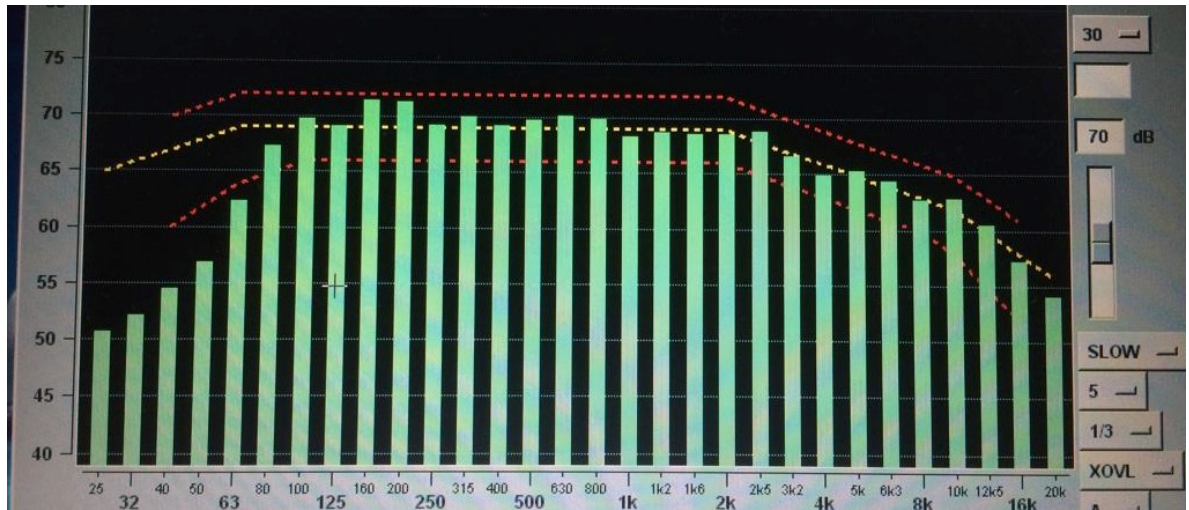


LFE

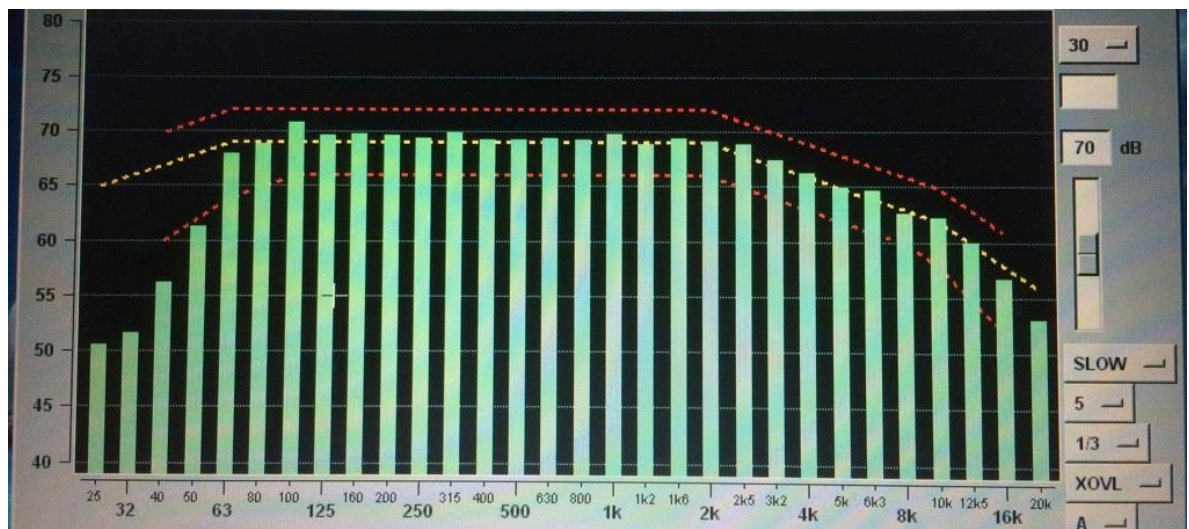


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LSS1, LSS2, LSS3, LSS4 y LSS5



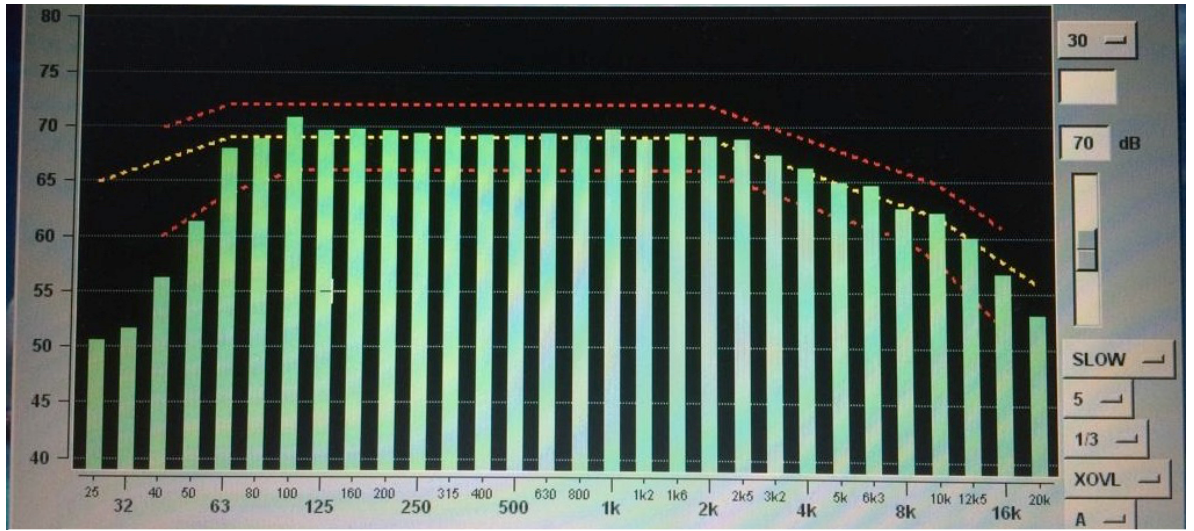
RSS1, RSS2, RSS3, RSS4 y RSS5



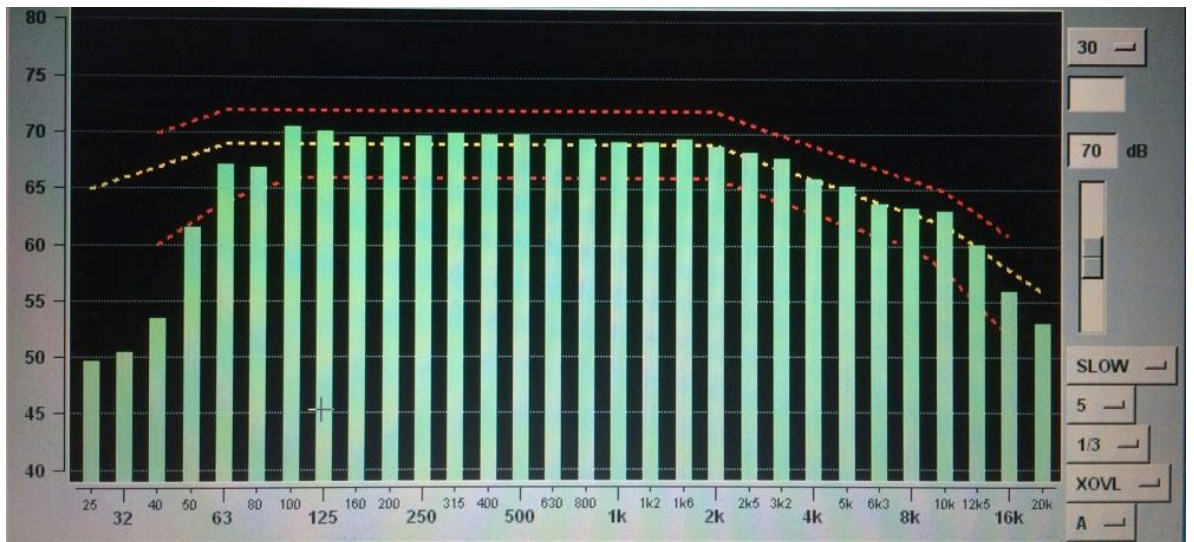


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LRS1 y LRS2

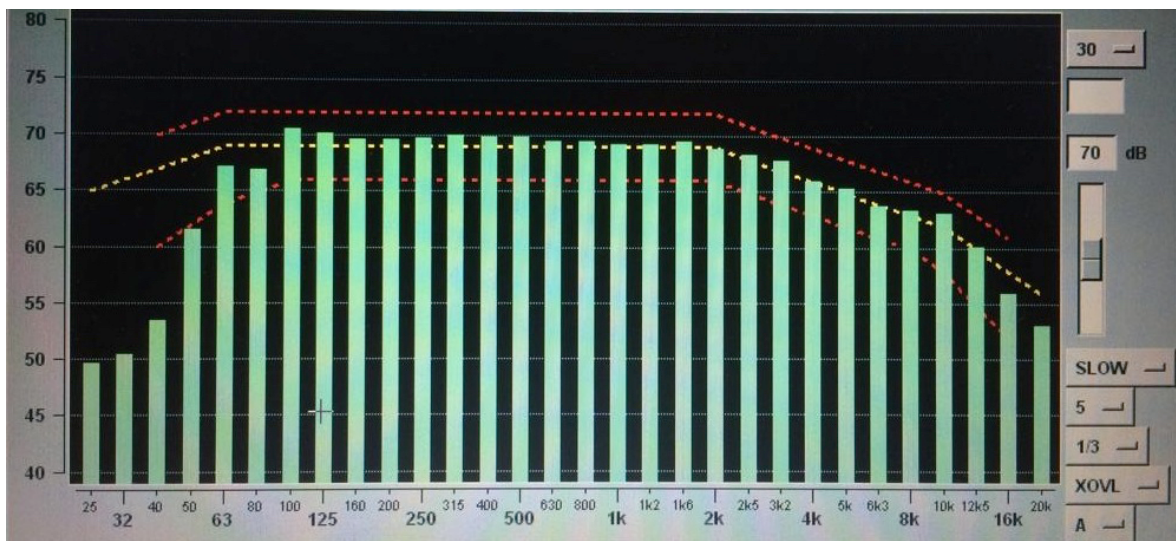


RRS1 y RRS2

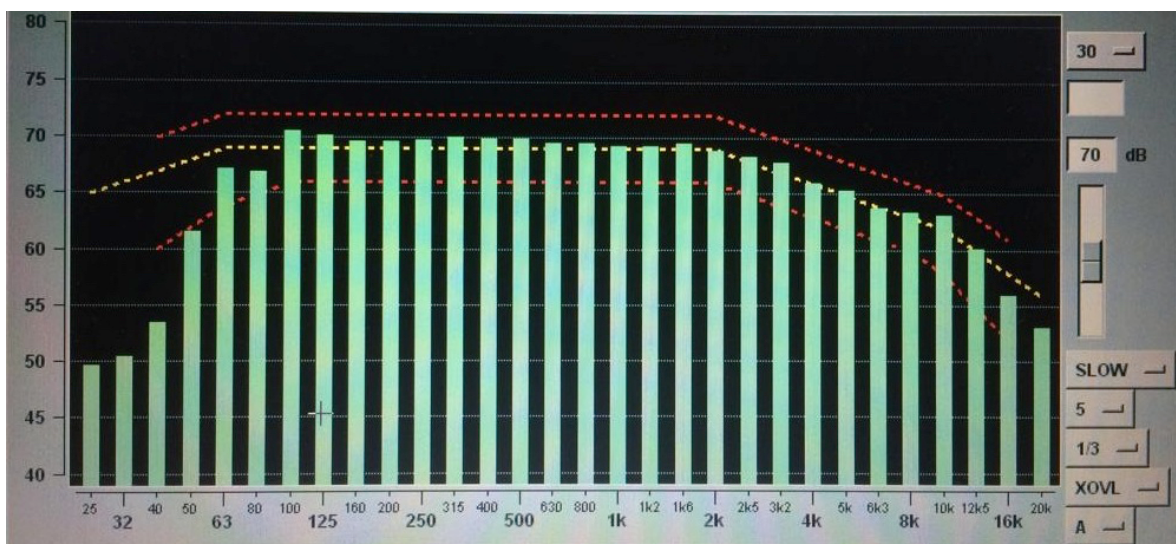


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LT1, LT2, LT3,LT4 y LT5



RT1, RT2, RT3,RT4 y RT5

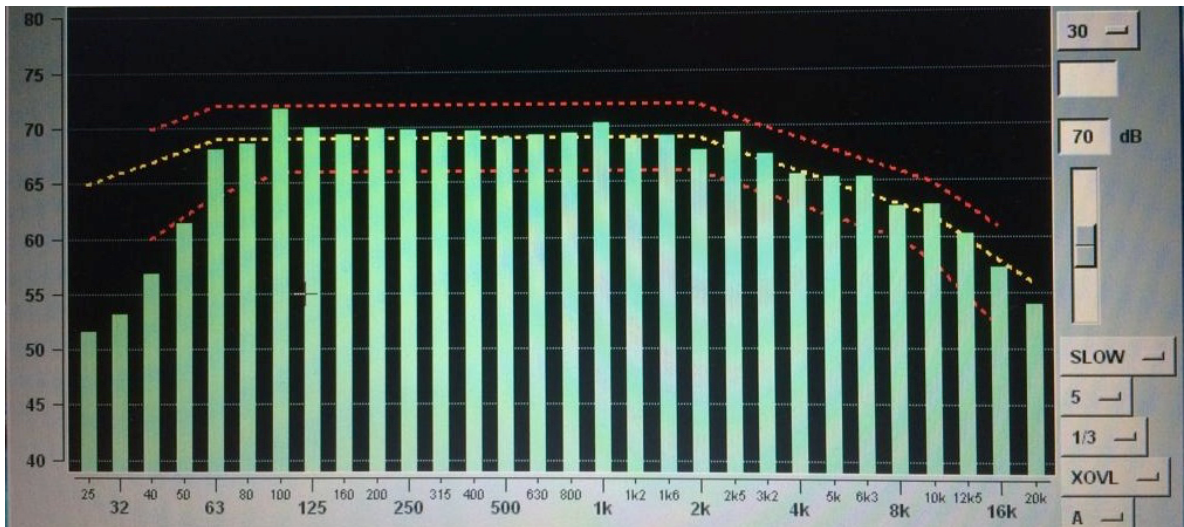




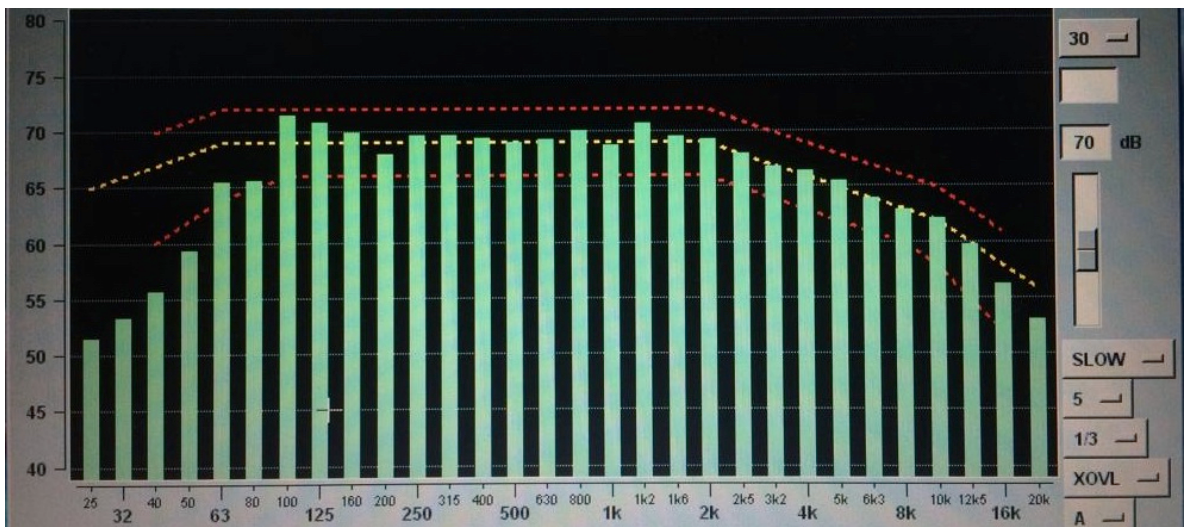
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### System 5.1

Left Surround



Right Surround

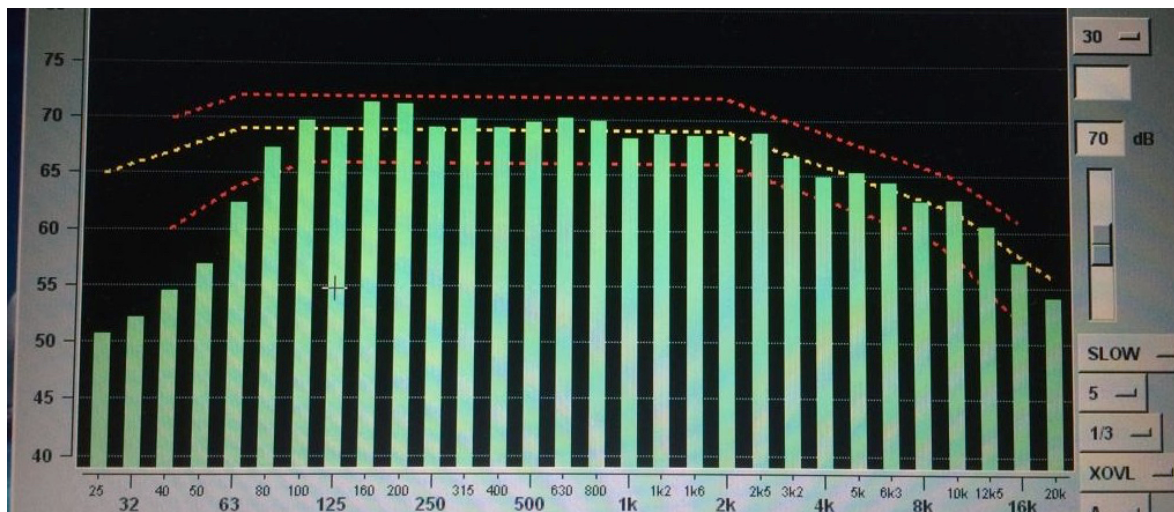




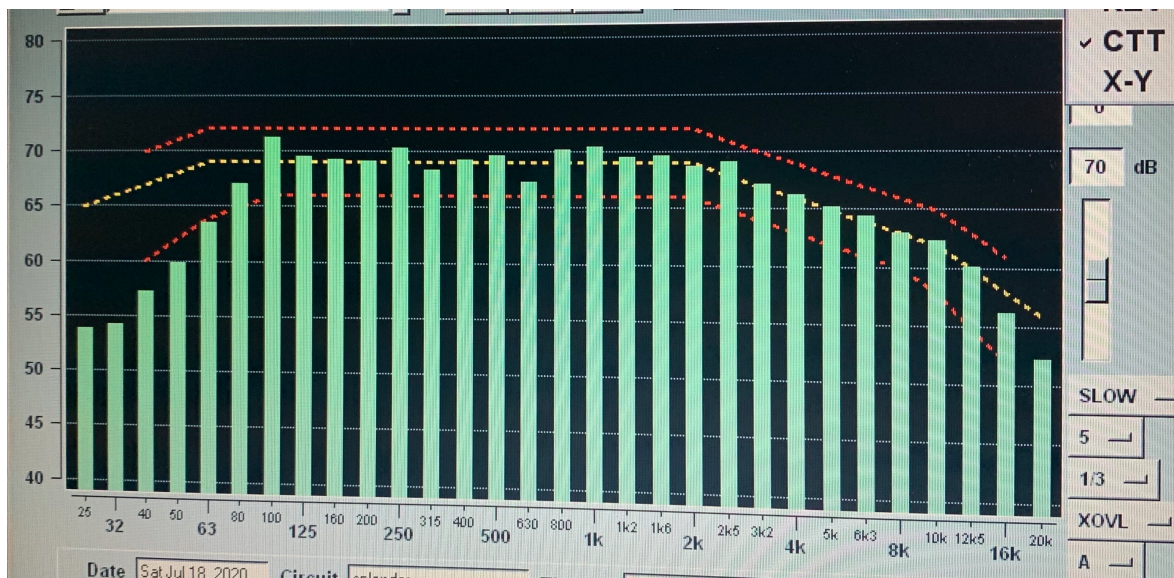
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System 7.1

Left Side Surround

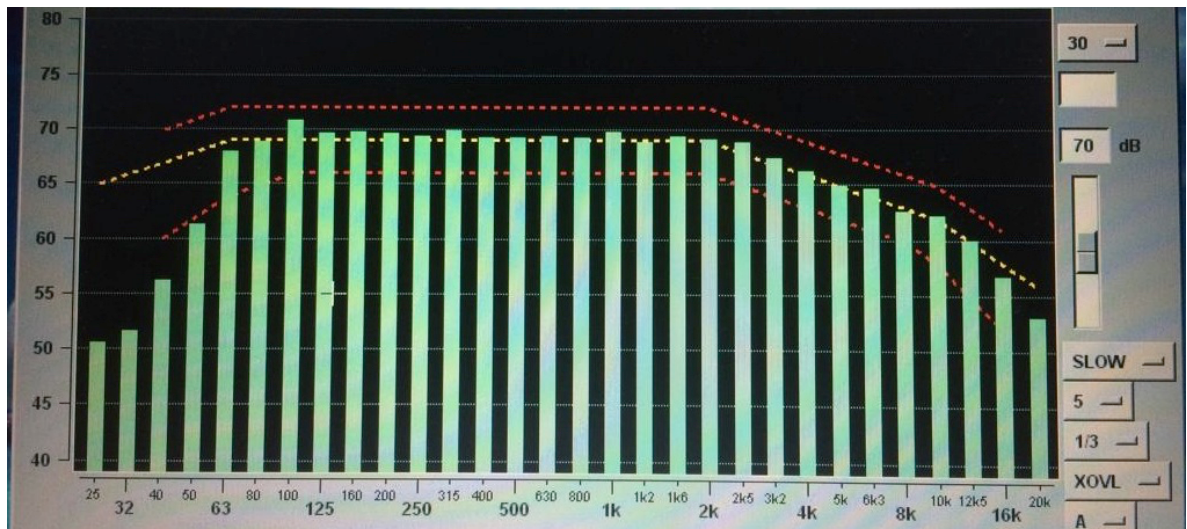


Right Side Surround

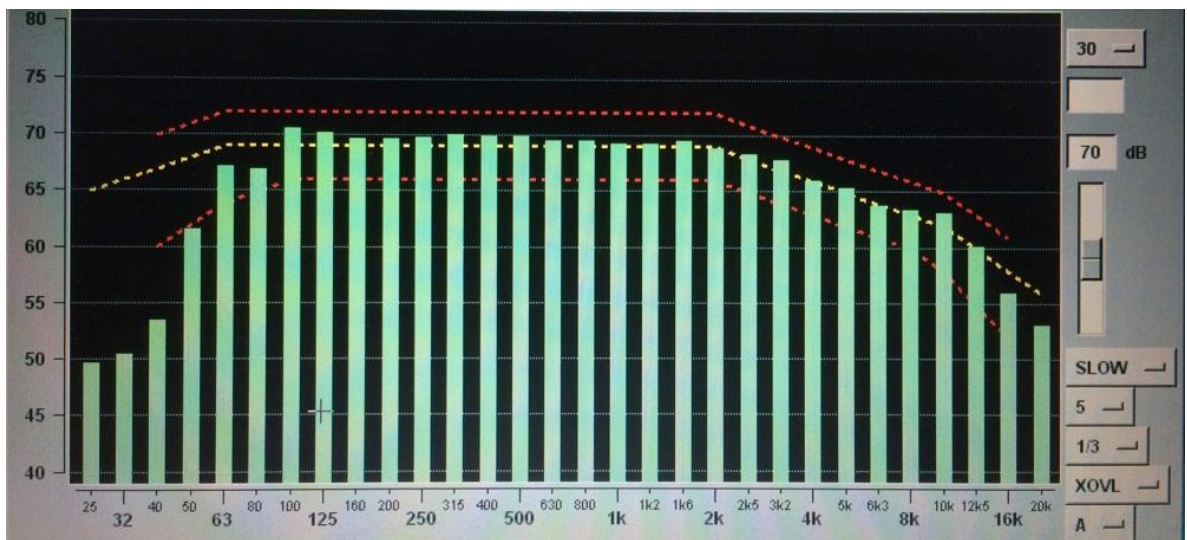


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Back Surround Left



Back Surround Right

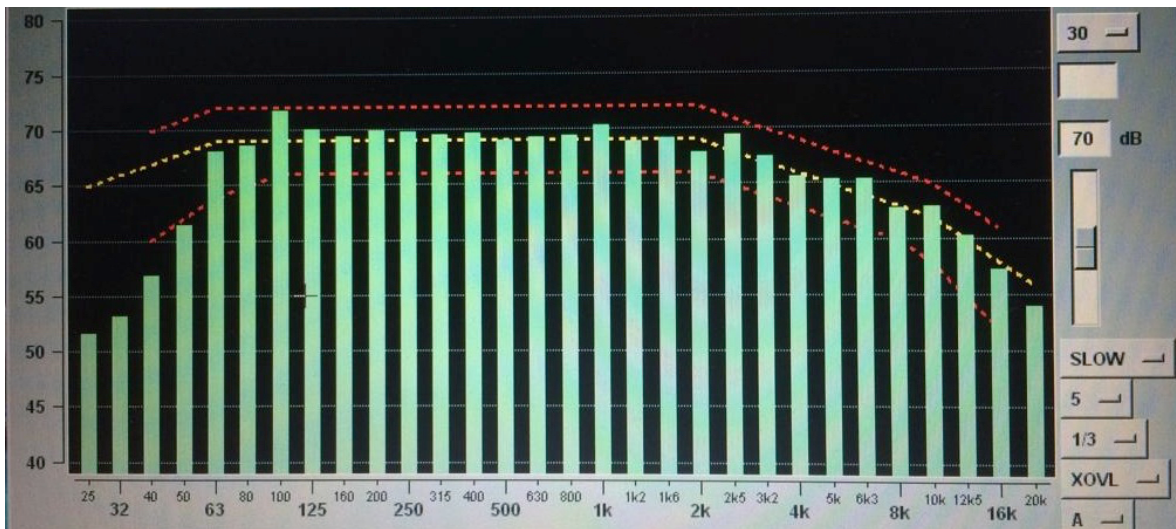




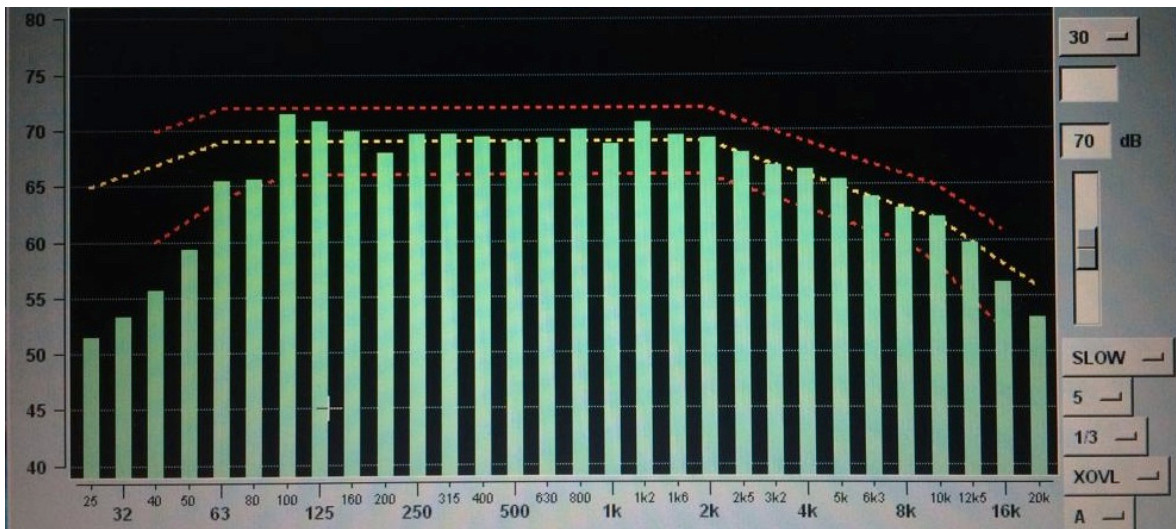
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### System 5.1

Left Surround



Right Surround



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**Settings and config System by:**

Christian Castillo  
Daniel Castillo  
Carolina Anton

**Design , Measured and calibrated by:**

Carolina Anton

**Assistant :**

Luis Estevez

**Reviewed and QC by:**

Ing. Daniel Castillo  
3BH CEO

3BH

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