ACOUSTIC FRONTIERS

Home Theater Calibration Process

1	**System setup and operational status**	**?**
1.1	AV processor inputs are properly setup for input type, channels and preferred decoding	
1.2	AV processor bass management settings matches physical speaker / sub types	
1.3	AV processor speaker/sub crossover setting is correct (typically 80Hz) and subwoofer crossover is off or set to above 130Hz	
1.4	All speakers near field response plots are similar and are within expected parameters	
1.5	Subwoofer near field response plots are within expected parameters	
2	**Critically listen to system**	
3	**Pre-calibration measurements**	
3.1	1/3rd octave frequency response of each channel at the primary listening position is within targets	
3.2	1/3rd octave 250Hz-2kHz frequency response of combined LCR channels at primary listening position is within targets	
3.3	1/24th octave 20Hz-250Hz frequency response of combined LCR and Sub channels and energy decay is within targets	
3.4	ETC at primary listening position is within targets	
3.5	RT60 at primary listening position is within targets	
3.6	Repeat 3.1 to 3.5 for secondary listening positions	
4	**Basic calibration**	
4.1	All speakers are SPL matched from the primary listening position	
4.2	All speakers are in the same relative phase	
4.3	All speakers are arrival time corrected from the primary listening position	
4.4	Subwoofers are arrival time corrected from the primary listening position	
4.5	Subwoofers level and phase is set to provide smooth transition at crossover frequency	
4.6	95dB SPL sine sweep 15Hz to 500Hz shows system is free of resonances and vibrations	
5	**Advanced calibration**	
5.1	Bass calibration: change listener position(s), speaker position(s), equalization, acoustic treatment to meet targets	
5.2	Soundstage calibration: change speaker/listener distance(s), speaker separation / toe in, acoustic treatment to meet targets	
6	**Re-perform basic calibration**	
7	**Re-perform critical listening**	
8	**Re-perform measurements**	
9	**Iterate 4 though 8 as necessary until targets are met**	

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10	**Onsite preparation for calibration report**	
10.1	Create / validate drawings of system speaker positions, subwoofer positions, listener positions and treatment locations	
10.2	Document processor and EQ settings	
10.3	Check to ensure full set of after measurements has been taken	
11	**Offsite preparation of calibration report**	
11.1	Document before / after measurements	
11.2	Document before / after critical listening scores	
11.3	Make recommendations for further changes / opportunities for improvement	

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