

General Description

Room Control. The THX 22 and THX 44 provide exact equalization controls for use in correcting room response problems—a critical step in recreating the home theater listening experience.

All rooms differ, and all rooms display acoustical problems of some sort. These anomalies distract from the enjoyment of the true home theater experience. Recording studios equalize their playback, and the same procedure at home yields an uncolored, transparent sound, as heard in the studio. These equalizers are also one of the quietest available at any price. After alignment, pressing the BYPASS switch reveals the before and after. The clarity is obvious.

First in Home Cinema. Rane developed the first equalizer designed specifically for Home THX audio systems. Rane equalizers are found in many of the finest recording studios and film dubbing stages around the world. This same circuit design is available for home theater playback.

Not just THX. Traditional surround sound systems also benefit from the THX 44 and THX 22. Though they meet THX certification requirements, these equalizers are ideal for any home theater application. Multiple channel equalization compensates for poor room acoustics and help to “timbre match” speakers. This is really important when using different center or surround speaker models than the left and right. These equalizers are applicable in plain stereo, Dolby Pro-Logic, THX, Dolby Digital, DTS, or any multichannel system. For 5.1 systems, use the THX 44 for the front channels and the THX 22 for the surround channels.

Main Channels. The THX 44 has three equalizer Channels for Left, Center, and Right. The THX 22 has two equalizer Channels, and may be used for the Left and Right Surrounds or as a dedicated stereo equalizer. Each section features an 11-band 1/3-octave graphic section for low to mid frequency corrections, plus a 2-band parametric equalizer for high frequencies.

Subwoofer Channel. The THX 44 also has a specially designed 2-band parametric channel to smooth out the extreme low end.

Stereo applications. In-wall speakers often carry a reputation for not sounding as good as box designs. Equalizers can greatly improve the response of in-walls by removing the peaks caused by various wall constructions, allowing the different channels to match room response better for a more transparent sound.

Anywhere in the home where remote speakers are used, regardless of brand or type, equalization makes a difference between sounding good and sounding great.

Setup and Alignment. The THX 44 and THX 22 install between the preamp/controller and the power amplifiers. Setting the controls to THX standards requires temporary use of a 1/3-octave analyzer with averaging. Consult the “Home THX Audio System Room Equalization Manual” available from the THX or Rane websites.

Once set up, all controls are hidden away behind the *included* security panel. A low-noise power supply and attachable 19" rack mounting ears are also provided.

Features

- 11 Bands of 1/3-Octave Graphic Equalization 80 Hz to 800 Hz, per Channel
- 2 Bands of Parametric Equalization, sweepable 1 kHz to 10 kHz Centers, per Channel
- THX 44 features Left, Center and Right Channels and a 2-Band Parametric Subwoofer Channel
- THX 22 features Left and Right Channels; Usable for Surround Channels or Stereo Applications
- Security cover, rack ears, and low-noise UL/cUL/CE approved power supply included



THX 22 & THX 44

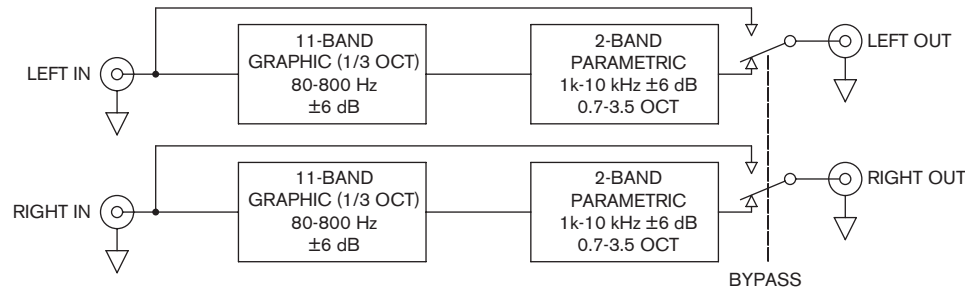


HOME CINEMA EQUALIZERS

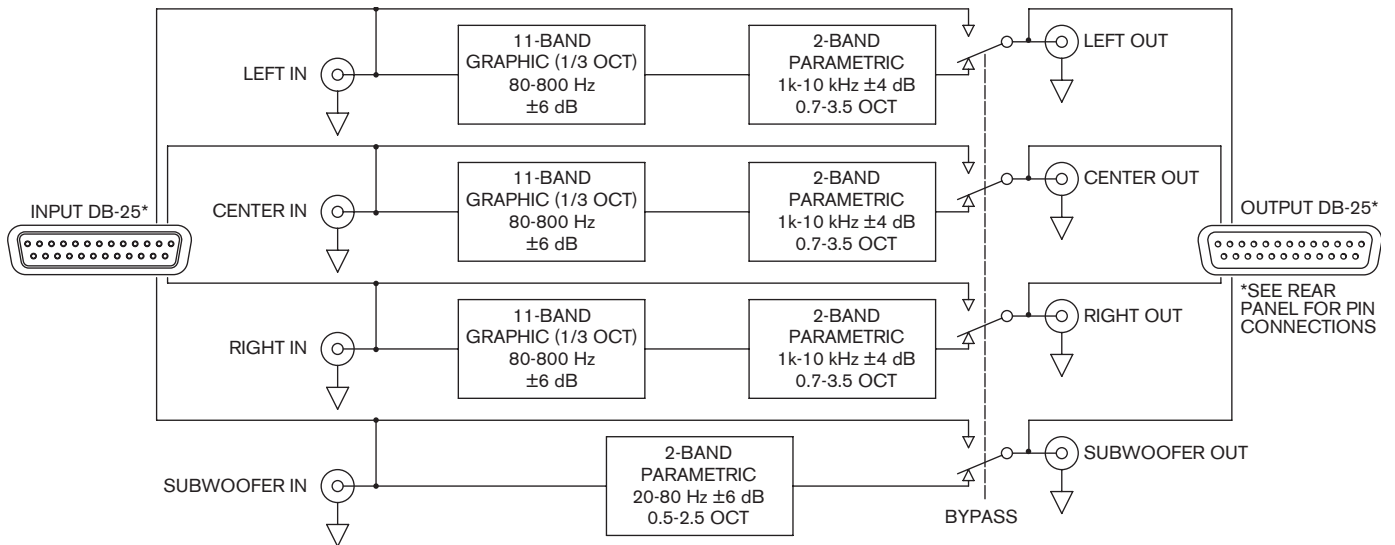
Parameter	Specification	Limit	Units	Conditions/Comments
Graphic Equalizer Sections:	THX 44 = Left, Right, & Center Channels			THX 22 = Left & Right Channels
.....Bands	(11) 1/3-Octave ISO Spacing			From 80 Hz to 800 Hz
.....Type	Interpolating Constant-Q			Smooth combining
.....Accuracy	3		%	Center frequency
.....Travel	20		mm	Positive grounded center detent
.....Range	±6	0.25	dB	
Parametric Equalizer Sections:				
.....Frequency Range	1 kHz-10 kHz			LR&C (THX 44); L&R (THX 22)
	20 Hz-80 Hz			Subwoofer (THX 44)
.....Bandwidth Range	0.7-3.5 octaves (Q=2.0-0.33)			LR&C (THX 44); L&R (THX 22)
	0.5-2.5 octaves (Q=3.0-0.5)			Subwoofer (THX 44)
.....Amplitude Range	±4	0.25	dB	LR&C (THX 44)
	±6	0.25	dB	Subwoofer (THX 44); L&R (THX 22)
Inputs: Type	Active unbalanced RCA Phono & DB-25 connectors (THX 44); RCA only (THX 22)			
.....Impedance	10k	1%	Ω	
.....Maximum Level	34.5	1	dBr	11 Volts peak
Outputs: Type	Active unbalanced RCA Phono & DB-25 connectors (THX 44); RCA only (THX 22)			
.....Impedance	50	1%	Ω	
.....Maximum Level	+34.5 > = 2k Ω	1	dBr	11 Volts peak
Frequency Response	20 Hz-20 kHz	+0/-2	dB	LR&C (THX 44), L&R (THX 22)
Group Delay	Linear (Minimum Phase)	±5°		20-20 kHz
THD+Noise	0.001	.0005	%	1 kHz, +27.5 dBr (5 V peak)
Signal-to-Noise	120	1	dB	re 5 V pk; A-wtg; input short; flat
	-92.5	1	dBr	A-wtg; input short, flat
	-90.5	1	dBr	20 kHz BW; input short, flat
	-84.5	1	dBr	A-wtg; input short, full boost
	-87.5	1	dBr	A-wtg; input short, full cut
Dynamic Range	127	1	dB	Max out/noise floor (+34.5 dBr/-92.5 dBr)
Channel Separation	90	min	dB	20-20 kHz BP, undriven inputs shorted
Unit: Agency Listing				
.....120 VAC model	Class 2 Equipment			National Electrical Code
	UL / CSA			Exempt Class 2 equipment
.....230 VAC model	CE-EMC			EMC directive 89/336/EEC
	CE-Safety			Exempt per Art. 1 of LVD 73/23/EEC
Power Supply: Agency Listing				Class 2 equipment
.....120 VAC model	UL			File no. E88261
	CSA			File no. LR58948
.....230 VAC model	CE-EMC			EMC Directive 89/336/EEC
	CE-Safety			LV Directive 73/23/EEC
.....100 VAC model	Built to JIS			Japan only
Power Supply: Input	18 VAC w/center tap	10%	Vrms	Model RS 1
.....Current	750	max	mA	rms current from remote supply
THX 44 Unit: Size	3.5"H x 19"W x 8.5"D (2U)			(8.9 cm x 48.3 cm x 21.6 cm)
	17 3/8" wide w/o rack ears			(44.2 cm wide without rack ears)
.....Weight	8 lb			(3.6 kg)
THX 22 Unit: Size	1.75"H x 19"W x 8.5"D (1U)			(4.4 cm x 48.3 cm x 21.6 cm)
	17 3/8" wide w/o rack ears			(44.2 cm wide without rack ears)
.....Weight	5 lb			(2.3 kg)
Shipping: Size	4.25" x 20.3" x 13.75"			(11 cm x 52 cm x 35 cm)
.....THX 44 Weight	13 lb			(5.9 kg)
.....THX 22 Weight	8 lb			(3.6 kg)

Note: 0 dBr=150 mVrms=Home THX Equalizer Reference Level

THX 22 Block Diagram



THX 44 Block Diagram



THX is a registered trademark of THX, Ltd.

Dolby Pro-Logic and Dolby Digital are registered trademarks of Dolby Laboratories Licensing Corporation

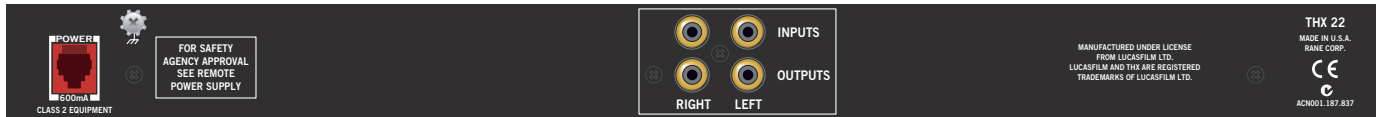
DTS Zeta Digital is a trademark of Digital Theater Systems Inc.

THX 22 & THX 44

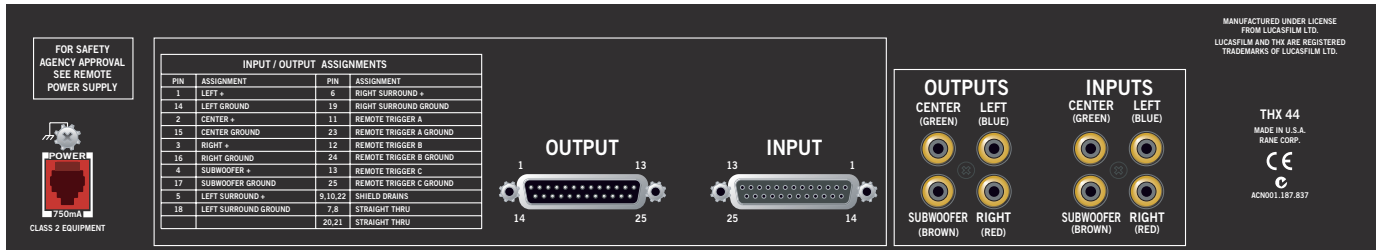
HOME CINEMA EQUALIZERS



Rear Panels



THX 22



THX 44

Architectural Specifications

The equalizer shall be approved and licensed by Lucasfilm Ltd. as a Home THX System Room Equalizer. As such it shall conform to all the specifications appearing in the 'Home THX® System Design and Licensing Manual' published by Lucasfilm Ltd. The Home THX equalizer shall be of interpolating constant-Q design to minimize interactions between adjacent bands.

Each channel of the equalizer shall consist of an 11-band 1/3-octave graphic section with center frequencies located on ISO centers from 80-800 Hz, and a range of ± 6 dB; additionally, a 2-band parametric section shall be provided with a frequency range of 1-10 kHz, and a bandwidth range of 0.7-3.5 octaves.

THX 22: The equalizer shall consist of two independent channels, designed for Left and Right.

THX 44: The equalizer shall consist of four independent channels. Three channels shall be designed for Left, Center, and Right front channels in a home cinema system. A fourth channel shall be designated for subwoofer use, consisting of a 2-band parametric section with a frequency range of 20-80 Hz, a boost/cut range of ± 6 dB, and a bandwidth range of 0.5-2.5 octaves.

All controls shall be 20 mm sliders with dust dams. Detented and positively grounded 0 dB points shall be provided for all level controls. Relays shall be used to control power on/off thumps, to provide an overall bypass function using a front panel mounted push-button switch, and to default to bypassed condition in the event of power loss. When power is applied to the unit and bypass mode is selected, this shall be indicated by a red LED indicator.

All controls shall be located behind a security cover and not accessible to the typical user. The security cover shall be supplied with the unit.

The inputs and outputs shall be active unbalanced designs terminated with parallel RCA phono jack connectors. The THX 44 shall include DB-25 input and output connections in addition to the RCA connectors.

The unit shall be exempt from agency safety requirements and powered from a UL listed, CSA certified remote power supply (120 VAC) or CE certified (230 VAC) via a rear panel input modular plug. The unit shall be constructed entirely from cold-rolled steel.

The unit shall be a Rane Corporation THX 22 or THX 44 Home Cinema Equalizer.



Both models include Security Cover & Rack-mount Ears (each attach separately)

