



THX 44

HOME CINEMA EQUALIZER

The control panel features the RANE logo, THX logo, and THX 44 HOME CINEMA EQUALIZER branding. It includes a POWER button, a BYPASS button, and a SUBWOOFER section with two sliders for LEVEL and FREQUENCY. The main section is divided into four channels: LEFT CHANNEL, CENTER CHANNEL, RIGHT CHANNEL, and SUBWOOFER. Each channel has a set of five frequency sliders (80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800 Hz) and a corresponding LEVEL and FREQUENCY slider. The LEVEL sliders range from -6 to +6 dB, and the FREQUENCY sliders range from -4 to +4 dB. The SUBWOOFER section has a LEVEL slider from -6 to +6 dB and a FREQUENCY slider from 0.5 to 2.5 kHz. The BYPASS button is located at the top right.

IMPORTANT SAFETY INSTRUCTIONS

For the continued safety of yourself and others we recommend that you read the following safety and installation instructions. Keep this document in a safe location for future reference. Please heed all warnings and follow all instructions.

Do **not** use this equipment in a location where it might become wet. Clean only with a damp cloth.

This equipment may be installed in an industry standard equipment rack. We recommend that all mounting holes be used, providing the best physical support. The equipment may be used as a table top device, although stacking of the equipment is dangerous and not recommended.

Do not directly block any of the ventilation openings. If rackmounting, please provide adequate ventilation. Equipment may be located directly above or below this unit, but note that some equipment (like large power amplifiers) may cause an unacceptable amount of hum or may generate too much heat and degrade the performance of this equipment.

Protect the power cord and plug from damage caused by being walked on or pinched. Protect the line cord, where it exits the unit, from excessive strain. Only use attachments and accessories specified by Rane.

Unplug this equipment during lightning storms or when unused for long periods of time.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug damage, spilled liquid, fallen objects into an opened chassis, exposure to rain or moisture, a dropped unit, or abnormal operation.

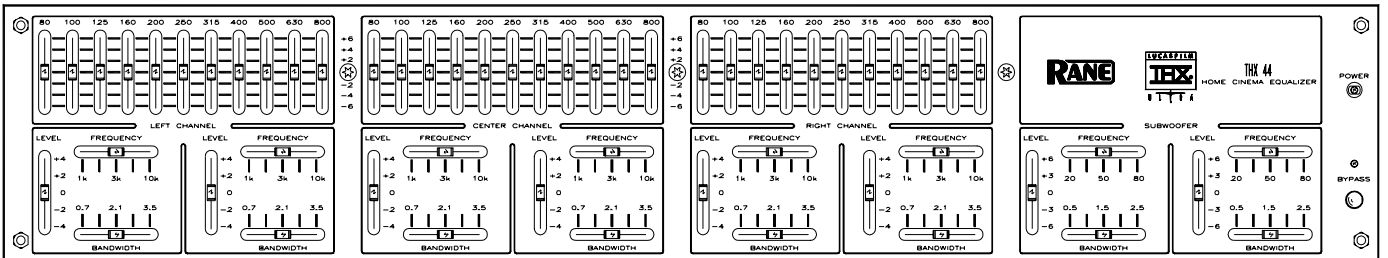




Security Cover Installed



Security Cover Removed



QUICK START

Great video is easy; great audio is hard, but a THX 44 makes it a lot easier. Read at least this boxed section and you'll be on your way toward great audio.

Hook-up is intuitive: In from the controller, Out to the amplifiers. Just follow the silkscreened legends on the rear of the unit. Use either the RCA jacks or the DB-25 connectors.

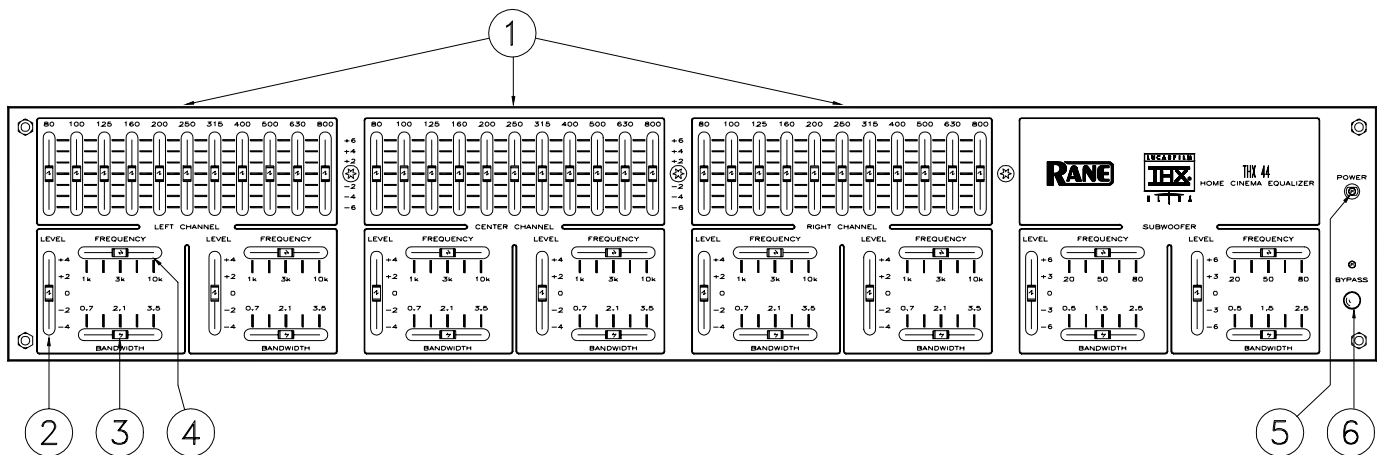
Familiarity with other graphic and parametric equalizers makes the THX 44 just as familiar. If this is your first equalizer, be gentle; it can overwhelm you.

Use the **BYPASS** switch as an aid in comparing equalized results with unequalized results. Pushbutton *in* and locked (LED *on*) is the bypassed (unequalized) mode; pushbutton *out* and unlocked (LED *off*) is the normal equalized mode. See the included "Home THX Audio System Room Equalization Manual" for the alignment procedures required. See the Operating Instructions on the back page for more information.

Install the supplied security cover after completing all settings. Be sure the **POWER** light fits snugly into the hole in the security cover.

Never connect anything except an approved Rane power supply to the red modular jack on the rear of the unit. This is an AC input and requires special attention if you do not have a power supply *exactly* like the one originally packed with your unit. See the full explanation of the power supply requirements on page Manual-3.

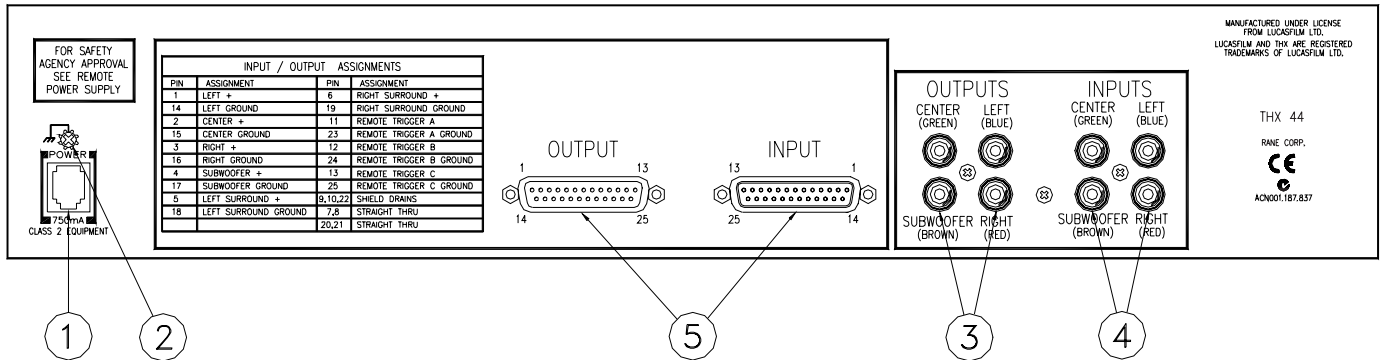
FRONT PANEL DESCRIPTION



- ① **Graphic equalizer filter level controls.** Each of the Left, Right and Center Channels have eleven slide controls used to set the individual levels of the interpolating constant-Q filters. Their range is ± 6 dB. The grounded center-detent design ensures all filters are off when positioned to 0 dB.
- ② **Parametric equalizer LEVEL control** sets the amount of boost/cut for this section. Same grounded center-detent design as the Graphic Equalizer sections. The range is ± 4 dB for the Left, Right, and Center Channels, and ± 6 dB for the Subwoofer Channel.
- ③ **Parametric equalizer BANDWIDTH control** sets the Bandwidth for this filter section. The range is 0.7-3.5 octaves for the Left, Right, and Center Channels, and 0.5-2.5 octaves for the Subwoofer Channel.
- ④ **Parametric equalizer FREQUENCY control** determines the center Frequency for this filter section. The range is 1k-10 kHz for the Left, Right, and Center Channels, and 20-80 Hz for the Subwoofer Channel.
- ⑤ **POWER indicator** lights any time power is supplied from the Rane model RS 1 power supply (included). To avoid confusion a distinction is made here between electrical and political.
- ⑥ **Overall BYPASS switch & indicator.** This pushbutton switch activates the “hard-wire” BYPASS function. When engaged (red BYPASS LED *on*), the INPUT connectors directly tie to the OUTPUT connectors (hard-wired). Engaging this switch converts the THX 44 into a relatively expensive patch cord, albeit one with pretty lights.

During the initial timed power-up sequence, or power loss of any sort, the THX 44 automatically goes into BYPASS mode.

REAR PANEL DESCRIPTION



- ① **Remote POWER supply input.** The unit is supplied from the factory with a Model RS 1 Remote Power Supply suitable for connection to this input jack. The power requirements of the unit call for an 18 volt AC center-tapped transformer only. **This is not a telephone jack.** Never use a power supply other than the one supplied, or a replacement approved by Rane Corporation. Using any other type of supply may damage the unit and void the warranty.
- ② **Chassis ground.** A #6-32 screw is used for chassis grounding purposes. See CHASSIS GROUNDING below.
- ③ **RCA OUTPUT connectors.** Active unbalanced design. Use high-grade RCA cables or the DB-25 to connect to the power amplifier inputs. You may use both simultaneously when required to feed different amplifiers.
- ④ **RCA INPUT connectors.** Active unbalanced design. Use either high-grade RCA cables or the DB-25 for interconnect to the controller outputs. *Do not use both the RCA and the DB-25 input connectors—the Inputs do not sum.*
- ⑤ **DB-25 connectors.** Wired per the Home THX Interconnection Standard. Refer to the silkscreened legend on the rear for pin identification. *Use only THX approved DB-25 Interconnection cables.* Other DB-25 cables may not function properly.

CHASSIS GROUNDING

If your system exhibits excessive hum or buzzing, there is an incompatibility in the grounding configuration between units somewhere. Your mission, should you accept it, is to discover how your particular system wants to be grounded. Here are some things to try:

1. Try combinations of lifting grounds on units that are supplied with ground lift switches or links.
2. If your equipment is in a rack, verify that all chassis are tied to a good earth ground, either through the line cord grounding pin or the rack screws to another grounded chassis.
3. Units with outboard power supplies do *not* ground the chassis through the line cord. Make sure that these units are grounded either to another chassis which is earth grounded, or directly to the grounding screw on an AC outlet cover by means of a wire connected to a screw on the chassis with a star washer to guarantee proper contact.
4. Sometimes cable TV systems can introduce another ground loop in combination with grounded amplifiers. Using an isolation transformer between grounded audio components may solve the problem. See Rane models BB 44x or BB 22.

THX 44 CONNECTION

Refer to the Home THX Audio System Block Diagram in the THX 44 Data Sheet for proper location of the THX 44.

When first connecting the THX 44 to other components, leave the power supply for last. This gives you a chance to correct mistakes before damaging fragile speakers, ears and nerves.

INPUTS

Inputs are actively unbalanced and fitted with parallel RCA phono pin jacks and DB-25 connectors. Use only one. They do not sum. Attempts to use both results in severe distortion.

OUTPUTS

The Outputs mimic the Inputs with one big exception: you may use both if desired. Use cables meeting the Home THX Interconnection Specifications available from Lucasfilm.

SIGNAL LEVELS

The THX 44 is designed for Home THX Audio reference levels of 0dB_r (150mV rms), and provides a minimum headroom of 34.5 dB above reference, making it virtually unclippable.

With all LEVEL controls located in their 0 dB detented positions, the THX 44 operates with unity gain from Input to Output. No additional gain settings are necessary. Use the THX 44 only for specific equalization.

OPERATING INSTRUCTIONS

HOME THX AUDIO SYSTEM ALIGNMENT

Follow the alignment procedure specified by Lucasfilm Ltd. as described in the "Home THX[®] Audio System Room Equalization Manual" supplied in this manual. Use only the recommended test equipment. It is not possible to align a Home THX Audio system without the use of proper procedures and a one-third octave realtime analyzer with averaging, and the special THX "Wow" Laserdisc (only supplied with some THX controllers or a licensed THX installer). It cannot be done by ear.

The purpose of the THX 44 in a home cinema system is to flatten the response between speakers and the room. There are no special curves to follow; these are within the controller—not the THX 44. The THX 44 should be aligned for a flat average response from each Channel.

DOLBY PRO-LOGIC AUDIO SYSTEM ALIGNMENT

Though the THX 44 meets Lucasfilm's THX[®] specifications, it is also suitable for Dolby Pro-Logic systems so that Left, Center, and Right Channels to have matching responses. Though the THX 44 can help non-THX speakers, ± 6 dB may not be enough boost/cut to compensate between different speaker designs. Left/Right and Center speakers should first

be chosen that have a similar sound, and the THX 44 can do the "fine tuning". Use a one-third octave realtime analyzer, and "flatten" the system as described in your analyzer manual. The THX 44 must be connected between the controller (or preamp) and the power amplifiers.

DOLBY DIGITAL AUDIO SYSTEM ALIGNMENT

The THX 44 is perfectly suited for discrete 5.1 systems by following the same principles of flattening the room response of each channel. The surround channels may be accommodated by using another THX 44, ideal when the processor has outputs for stereo subwoofers or a sixth main channel. Otherwise, the Rane THX 22 controls duplicate the THX 44's for the surround speakers, making it an ideal match for the THX 44 in 5.1 systems.

SETTING CURVES USING THE THX 44

Our unique interpolating constant-Q circuitry makes setting curves easy. For the graphic sections, what you see is what you get – more so than on any other equalizer. Referring to your room result curves, begin by positioning the sliders to create the inverse curve shown by the instrumentation. Remember, most applications require only a few dB of boost or cut. If more is required, use architectural and mechanical means: add, remove, or relocate acoustically sensitive items (speakers, drapes, carpets, mirrors, etc.) as required.

USING THE BYPASS SWITCH

The THX 44 provides you with an overall BYPASS switch & indicator as a useful tool for optimizing settings. Use the BYPASS switch for making quick "A-B" comparisons, i.e., comparing "A", equalized (BYPASS out, LED off), versus "B", unequalized (BYPASS in, LED on). To do this freely, without danger of system damage, you must pay attention to how much equalization is being used. Failure to do so can produce alarming results.

Since the THX 44 always operates at unity gain in the BYPASS mode, comparison when a lot of boosting, or cutting has been done, can result in startling level differences between the two. Therefore you want to keep the system level down until you first use the BYPASS switch. *Be careful the first time you use it.*

BALANCED AMPLIFIERS

- Two situations can cause hum or grounding problems:
- When the THX 44 is installed at a distance greater than 10 feet from the controller or amplifiers (which is not recommended for unbalanced wiring).
 - When an amplifier with a balanced input is connected to the unbalanced Output of the THX 44.

For solutions, see RaneNote 110, "Sound System Interconnection", downloadable from Rane's web site.

The best option is the Rane BB 44x, a 4-way balancing-isolating-level matching device with RCA and XLR connections. Again, see our web site.